

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 99-CV-2496 (GK)
)	
PHILIP MORRIS USA INC. (f/k/a)	
PHILIP MORRIS INCORPORATED), <u>et al.</u> ,)	
)	
Defendants.)	

UNITED STATES' WRITTEN DIRECT EXAMINATION OF

ALLAN M. BRANDT, Ph.D.

SUBMITTED PURSUANT TO ORDER #471

1 **Q:** Can you please state your name for the record?

2 A: Allan M. Brandt.

3 **Q:** Dr. Brandt, what is your current professional position?

4 A: I am the Amalie Moses Kass Professor of the History of Medicine at Harvard
5 Medical School and Professor of the History of Science at Harvard University, where I
6 am currently the chair of the Department of the History of Science.

7 **Q:** Have you been retained to testify as an expert witness in this case?

8 A: Yes, I have.

9 **Q:** Before we address the substance of your expert opinion, let us ask you a bit
10 about your educational and professional background. First, where did you receive
11 your professional education?

12 A: Following my graduation from Brandeis University in 1974, I began doctoral
13 work in history at Columbia University.

14 **Q:** For what reason, if any, did you choose to pursue your Ph.D. at Columbia?

15 A: I selected Columbia because it had a particularly distinguished faculty, especially
16 in the area of American social and political history during the twentieth century.

17 **Q:** Did you study with anyone in particular at Columbia?

18 A: I did. My principal advisor and mentor throughout my graduate education was
19 William E. Leuchtenburg, a well-known and distinguished historian of the United States
20 in the twentieth century.

21 **Q:** Did you concentrate on any specific areas within the field of American social
22 and political history while you were at Columbia?

23 A: In my first year at Columbia, I wrote a master's thesis on the history of city

1 planning and soon became intensively interested in the history of American medicine.

2 **Q: Was there a reason that you became interested in the history of American**
3 **medicine?**

4 A: Yes. During the mid-1970s historians were becoming engaged in the
5 investigation of the history of everyday life: how people lived in families and
6 communities and the character of social experience. These questions often had not been
7 explored in traditional political, economic, and diplomatic historical accounts.

8 **Q: While you were at Columbia, did you pursue these questions within the**
9 **framework of the history of American medicine?**

10 A: Yes. I began to explore how I might utilize the history of medicine to offer new
11 insights into such common experience. I soon found myself taking the subway up to the
12 Columbia College of Physicians and Surgeons where their excellent library provided me
13 with a wide array of materials now principally of interest for their historical value. I
14 found that the primary historical materials there – old medical journals, books, and
15 pamphlets now relegated to the basement of the library – constituted a remarkable set of
16 resources for recovering important elements about the past, especially as it related to the
17 social experience of disease and social responses to disease. I became especially
18 committed to exploring and understanding how the incidence of epidemic and chronic
19 diseases could reveal central aspects of society, medical care, and professional
20 relationships. This work was not unique. I was influenced by – and soon became part of
21 – a group of medical historians who were actively re-orienting the field of medical
22 history to make it a central aspect of American social and cultural history. By
23 understanding experiences such as childbirth, aging, diseases, and health-seeking,

1 historians could make substantial contributions to a deeper understanding of American
2 (and other nations') history.

3 I also became increasingly interested in the history of medical knowledge and the
4 processes associated with its development, evaluation, and application. I began to
5 conduct research on the historical processes of acquiring new medical knowledge,
6 experimentation with human subjects, and the foundations of clinical knowledge and
7 practices.

8 **Q: Was this area of interest part of your degree program at Columbia?**

9 A: Yes, it was. As a result of my strong interest in these areas, I developed a
10 specialized field in the history of American medicine for comprehensive exams that were
11 part of my graduate studies as well as preparing in the traditional areas of American
12 political and social history (from the colonial period to the present). I read widely in both
13 the traditional history of medicine (which centered on the progressive development of
14 medical and scientific knowledge) as well as new works in the social history of medicine
15 (which centered on the history of disease), and upon the successful completion of my
16 comprehensive exams, I was awarded an M.Phil degree by Columbia in 1978.

17 **Q: Did you publish any papers in the area of medical history while you were at**
18 **Columbia?**

19 A: Yes. While I was a graduate student, I published two scholarly, peer reviewed
20 papers that attracted considerable interest. As a result of my growing interest in medical
21 history and medical ethics, I spent the summer of 1977 as an Intern at the Hastings
22 Center. The Center was established in 1969 as the first organization in the nation to
23 focus academic and public attention on a series of critically important ethical debates in

1 medicine and society. I spent most of my time that summer conducting research on the
2 history of the use of human subjects in medical research. In particular, I began an
3 intensive investigation into the Tuskegee Syphilis Study. The Study had attracted
4 considerable notoriety in 1972 when it was first exposed in the public press. As a result
5 of these initial revelations, the Department of Health Education and Welfare had
6 appointed a committee to investigate the charges of abuse of human research subjects that
7 the press reports raised. Unfortunately, this committee never reviewed the historical
8 records of the Study which had been preserved at the National Archives. I became
9 aware of these materials when conducting initial research for my doctoral dissertation.
10 They were so significant, and added so much to the very preliminary and incomplete
11 account offered by the HEW investigation, that I briefly put aside my doctoral work to
12 thoroughly investigate the history of the experiment.

13 My article on the Tuskegee Syphilis Study, which originally appeared in the
14 *Hastings Center Report*, one of the nation's premier journals of medical ethics, has been
15 widely reprinted since it was first published in late 1978. This article offered a historical
16 assessment of why the study took place and how it continued for 40 years from 1932 to
17 1972. In this instance the men in the study, poor African American sharecroppers, had
18 been told that they were receiving expert care from government physicians. In reality,
19 the researchers worked to assure that the men did not receive treatment in order to study
20 the effects of untreated syphilis. I evaluated how such fundamental breaches in prevailing
21 medical ethics could occur.

22 **Q: Outside of the article being reprinted, has your work in this area attracted**
23 **any other attention?**

1 A: Yes, it has. As a result of this work, Senator Kennedy wrote to the Secretary of
2 HEW, Patricia Harris, requesting a further inquiry into the Study. Jay Katz, a physician
3 and member of the Yale Law School faculty, who had been a member of the original
4 HEW committee, invited me to visit him at Yale to review the documents I had
5 discovered in the archives and cited in my work. He was shocked that his committee had
6 not been provided with these materials and wrote in protest to Senator Kennedy and
7 others. Ultimately, in 1997, President Clinton issued an official apology to the survivors
8 of the study.

9 **Q: Did the work on Tuskegee contribute to your expertise as a historian?**

10 A: I believe that it did. In the course of working on this article and my subsequent
11 research for my doctoral dissertation, I developed considerable experience in the use of
12 government records and the National Archives specifically. Much of the material I used,
13 both in my article on Tuskegee and in my doctoral dissertation, had never before been
14 explored by historians, or for that matter, any researcher. I became highly expert in the
15 use of published and unpublished sources in the medical and public health areas.

16 **Q: You mentioned that as a graduate student you published two scholarly, peer**
17 **reviewed papers that attracted considerable interest. Can you describe the second**
18 **one?**

19 A: I published an article on the history of the Salk polio vaccine. The Salk vaccine
20 was widely recognized as one of the great triumphs of twentieth century medical
21 research. As a result of my emerging interest in the history of human subject research, I
22 became aware of the significant historical and ethical issues associated with the testing of
23 this vaccine. The Salk trials were one of the largest medical experiments in modern

1 history, and I was eager to understand precisely how they had been conducted, and how
2 the ethical issues of utilizing children in a research study had come to be considered.

3 **Q: What was the significance, if any, of the article on the Salk vaccine for**
4 **ongoing medical research?**

5 A: The article on testing the Salk vaccine, like the article on the Tuskegee Study,
6 raised important issues about the process by which medicine would utilize research
7 subjects in order to attempt to develop new scientific findings. These two articles broke
8 new ground in identifying the ethical debates in medicine as potentially important areas
9 of historical research. They also centered attention on certain methodological
10 considerations about the nature of presentism, historical context, and especially historical
11 contingency.

12 **Q: Dr. Brandt, did you write a doctoral dissertation at Columbia?**

13 A: Yes, I did.

14 **Q: Can you describe your dissertation topic?**

15 A: Certainly. After considering a number of topics for my dissertation that would let
16 me explore critically important questions about the nature of disease and society in the
17 twentieth century United States, I eventually decided to concentrate my attention on the
18 history of sexually transmitted diseases. My interest in this area preceded the HIV
19 epidemic; I conducted a comprehensive investigation of the history of syphilis and
20 gonorrhea in order to examine changing medical knowledge and the social meanings that
21 had aided or inhibited the successful management of these diseases in clinical medicine,
22 public health, and the military. Although my dissertation covered many areas, I focused
23 on understanding why these diseases persisted so significantly in the face of the

1 development of remarkably effective treatments.

2 **Q: Did you reach any conclusions as to the question of why the diseases**
3 **persisted so significantly?**

4 A: Yes. Ultimately, I wrote a dissertation that focused on aspects of the history of
5 sexuality and sexual mores and how the social attitudes and values associated with these
6 diseases had become a principal obstacle to the treatment of STDs in spite of the
7 historical development of impressively effective treatments. It was for this reason that I
8 entitled the book which came from a revised version of my dissertation: *No Magic Bullet*.

9 **Q: When did you complete your dissertation?**

10 A: 1983.

11 **Q: Did you receive a doctoral degree from Columbia?**

12 A: Yes. Upon completion of the dissertation, I received my Ph.D. from Columbia in
13 1983.

14 **Q: What type of research did you undertake in order to write *No Magic Bullet*?**

15 A: As noted, I had developed an especially strong commitment to the utilization of
16 historical archives in my work as a graduate student. The book made extensive use of
17 public health and military archives at the National Archives, as well as substantial
18 unpublished materials in a number of other archival depositories. For example, I spent a
19 considerable amount of time doing research in the Social Welfare History Archives
20 Center at the University of Minnesota, which holds archival materials from the American
21 Social Health Association, a national organization that addresses problems of sexually
22 transmitted diseases that was founded in 1912.

23 **Q: Was *No Magic Bullet* published?**

1 A: Yes, it was published in 1985.

2 **Q: What type of response did the book receive after its publication?**

3 A: Upon its publication in 1985, *No Magic Bullet* was widely noted and read; a
4 second edition appeared in paperback with a new chapter on AIDS in 1987. Many
5 reviewers of *No Magic Bullet* observed the depth of the research, especially in archival
6 materials. Its publisher, Oxford University Press, nominated it for a Pulitzer Prize and
7 the Bancroft Prize, a well-known book prize in American history. The book was also
8 selected as a finalist for the *Los Angeles Times* Book Award. The book has come to be
9 widely used in college courses in medical history; American history courses, as well as
10 courses in emerging fields like the history of sexuality. *No Magic Bullet* is now in its
11 twelfth printing.

12 **Q: Is that typical for published works in your field?**

13 A: I think it is atypical. For a scholarly book in the history of medicine, *No Magic*
14 *Bullet* attracted considerable interest and has been widely read. Coming as it did in the
15 early phase of the HIV epidemic, public health officials and policy makers sought to
16 utilize the narrative and analysis I had developed to seek insights into the important
17 medical and policy debates surrounding HIV. For example, I was often asked to help
18 assess the role that traditional contact screening programs for syphilis had played in the
19 history of that disease and to evaluate their possible utility for addressing HIV.

20 **Q: Would you describe that as a policy question?**

21 A: Yes, I would.

22 **Q: And from that point – the publication of *No Magic Bullet* in 1985 – forward,**
23 **have you addressed policy questions in the course of your work as a medical**

1 **historian?**

2 A: Yes. In many ways the next phase of my career led me to become more
3 significantly involved in questions about how best to use history in the public sphere. I
4 testified, for example, before both the Reagan and the Bush Presidential HIV
5 Commissions. And I served on two important committees at the National Academy of
6 Sciences Institute of Medicine (IOM) that examined critical aspects of the HIV epidemic.
7 The first examined the social impact of HIV disease on American society. The second
8 examined the complex issues associated with the contamination of the U.S. blood supply
9 in order to make recommendations to avert future problems. In both instances, I
10 participated in the collaborative process of writing portions of the published reports
11 which came from these interdisciplinary study committees.

12 **Q: Did you also continue to publish in the same subject area?**

13 A: I did. During the 1980s and early 1990s I published a number of articles on both
14 the history of STDs and the implications for HIV disease, as well as papers on specific
15 HIV policies. For example, I published major articles in leading peer reviewed journals
16 such as *Science* and the *American Journal of Public Health*. A central aspect of this
17 work was the notion that historians of medicine could bring important findings and
18 insights to a wider range of medical, public health, and policy issues. I also participated
19 in several important collaboratively authored papers in the area of health policy that
20 appeared in the *Journal of the American Medical Association* and the *New England*
21 *Journal of Medicine*. These articles evaluated the problems with HIV premarital
22 screening, as well as issues associated with screening of immigrants.

23 **Q: During this period after completing your dissertation, were you doing**

1 **anything professionally other than research and publication?**

2 A: Yes. In fact, I started teaching prior to completing my dissertation. In my final
3 semester at Columbia, as I was completing my dissertation, I was offered an excellent
4 one semester appointment in the Department of History at Smith College. At Smith I
5 taught an undergraduate survey course in American history since the late nineteenth
6 century, and a seminar course on the United States since 1945. Both courses provided
7 me with an important opportunity to consolidate and define my graduate work in
8 American history, as well as to design and implement sophisticated college level courses.

9 **Q: Did you continue teaching after the semester appointment at Smith?**

10 A: I did. After my semester at Smith College, I joined the Harvard faculty as an
11 assistant professor in the summer of 1982. The position was as a historian of medicine
12 and was split between Harvard Medical School and Harvard's Department of the History
13 of Science. This was a somewhat unusual joint appointment in that it required teaching
14 medical students, undergraduates, and doctoral students. It was also unusual in that it
15 was not principally in either the medical or the arts and science faculty; it was a full-time
16 joint appointment.

17 **Q: Can you explain more about what the joint appointment involved?**

18 A: In this position I had the opportunity to develop a range of original (and
19 innovative) courses for students in a variety of programs. I developed a course for
20 medical students that centered attention on changes and continuities in the practice of
21 medicine. The course examined critical shifts in medical knowledge and inquiry;
22 changing medical technologies; medical institutions for patient care and education; as
23 well as important changes in public health and epidemiology. A major aspect of my work

1 with medical students has been and remains to demonstrate the relevance and utility of
2 the history of medicine for understanding current medical practice and policy.

3 My position at Harvard Medical School also offered an unusual opportunity to
4 join with other faculty in exploring the social and behavioral determinants of disease.

5 Our Department of Social Medicine at Harvard Medical School, one of only 3 or 4 in the
6 country, draws together social scientists whose work centers on social forces in the
7 production of disease; the social meanings of diseases; and social responses to disease.

8 The Department also centers attention on the patient-doctor relationship and core issues
9 in medical ethics and health policy.

10 **Q: Can you provide examples of other courses that you have taught at Harvard?**

11 A: As a member of the Faculty of Arts and Sciences, during the mid-1980s I
12 developed a course called Medicine and Society in America as part of Harvard's Core
13 Curriculum. Core courses have a significant degree of peer review (something quite
14 unusual for the most part in university teaching) in that syllabi and course materials are
15 submitted to a committee of senior professors to evaluate both the content and the
16 pedagogy associated with the course. At the time, it was quite unusual for a junior
17 faculty member to be approved to offer a course in the Core Curriculum, which fulfills a
18 key distribution requirement for Harvard undergraduates.

19 I have continued to offer this course regularly at Harvard since 1988, except for a
20 brief period when I taught at the University of North Carolina in the early 1990s. The
21 course offers a synthetic survey of central themes relating to patterns of disease in North
22 America since the discovery of the New World. It examines historical epidemiology and
23 demography; changing concepts of therapeutics; the history of attempts to address

1 epidemic disease; the rise of public health institutions; and the history of medical
2 education and professionalism. Further it traces what has widely come to be known as
3 the epidemiologic transition: the shift in the twentieth century from the predominance of
4 infectious diseases to the predominance of systemic chronic diseases such as cancer and
5 heart disease. I have now offered this course eight times and continue to revise it each
6 time it is offered. It is probably the largest history of medicine course offered anywhere
7 in the United States, with 200-300 enrollees in a typical year.

8 **Q: You mentioned the University of North Carolina. How long were you there?**

9 A: In 1990 I accepted a position at the University of North Carolina, where I spent
10 two years in the Department of Social Medicine and the History Department. At the
11 time, there was no opportunity for me to be promoted to a tenured position at Harvard,
12 and I opted instead to take the position at UNC. UNC has among the best Departments of
13 History and Social Medicine in the country. Shortly after leaving for UNC, however, a
14 new position was endowed at Harvard in the history of medicine.

15 **Q: When, specifically, was that?**

16 A: 1992. In 1992, I was appointed as the Amalie Moses Kass Professor of the
17 History of Medicine with a full joint appointment in the medical faculty and the faculty
18 of arts and sciences. This named chair was the first in the history of medicine at Harvard.

19 **Q: With the endowed position and joint appointment, have you continued
20 teaching at both the medical school and the arts and sciences department?**

21 A: Yes, I have. Since my appointment I have taught extensively in both faculties.
22 Specifically, I direct a joint program in the history of medicine that brings together
23 faculty and students from the arts and sciences and the medical school.

1 **Q: Have you held any other appointed positions at Harvard?**

2 A: Yes. First, in 1997, at the request of the Dean of the Medical School, I accepted
3 the appointment as Director of the Division of Medical Ethics. This appointment
4 reflected both my ongoing interest in medical ethics as well as my research work on the
5 history of medical ethics. The Division of Medical Ethics has principal responsibility for
6 teaching and research in this field at Harvard Medical School. The program is diverse
7 and includes a post-doctoral fellowship, medical education, an instructional program to
8 enhance scientific integrity, and a wide range of public programs. The Division also
9 holds monthly meetings to discuss ethics case consultations in the Harvard teaching
10 hospitals. After my seven years in this position, the medical school appointed its first full
11 professor of medical ethics in 2004 who has recently assumed the responsibilities as
12 director of the Division of Medical Ethics.

13 Second, in 1999, I became chair of the Department of the History of Science in
14 the Faculty of Arts and Sciences, a position I continue to hold. As chair, I have principal
15 responsibility for overseeing our undergraduate major, our doctoral program, curriculum
16 and teaching in the Department. I also serve as a principal advisor to doctoral students
17 working in the history of modern medicine and have taught a number of outstanding
18 students over the last two decades who have gone on to have important scholarly careers.

19 In addition to this administrative role, I have served on a large number of
20 departmental, school-wide, and university wide committees. I have been elected to the
21 Faculty Council of the Faculty of Arts and Sciences and to the Faculty Council at
22 Harvard Medical School. These administrative committees advise the Deans on policy
23 and curriculum in their respective schools.

1 **Q: Has your scholarly research continued during your teaching career?**

2 A: It has, and it expanded beyond my early focus on sexually transmitted diseases.
3 At Harvard, I became increasingly interested in conducting a major project on the history
4 of cigarette smoking in the United States.

5 **Q: Why did you become interested in such a project?**

6 A: There were a number of factors that indicated to me that this would be a project of
7 potentially great importance. First, by the time I began this work in the late 1980s, it was
8 already clear how important cigarettes were as a major cause of disease and death. Given
9 my strong interest in social and behavioral determinants of disease, I understood that
10 cigarettes would provide an important avenue for understanding important social,
11 cultural, scientific, medical, and public health developments of the twentieth century. In
12 this sense the project was consistent with my commitment to utilizing aspects of the
13 history of medicine to better understand American social and cultural history. Moreover,
14 given the significance of tobacco-related disease, I was eager to understand the history of
15 public health policy and politics associated with the control of tobacco. Finally, I
16 believed the project would demonstrate the importance of the history of medicine and
17 science to contemporary public health policy. In evaluating this topic, I also quickly
18 came to the conclusion that it could be sustained by an impressive volume of primary
19 sources, both published and unpublished.

20 **Q: Have you published on the history of cigarette smoking?**

21 A: Yes. Over the last decade, I have published more than fifteen peer-reviewed
22 essays and articles on the history of cigarette smoking. And I have now nearly completed
23 a book length manuscript on the history of cigarette smoking over the last century. The

1 book will be based upon intensive research in published and unpublished sources. This
2 includes a wide array of primary and secondary materials including newspapers and
3 magazines, advertisements, and medical and scientific literatures.

4 **Q: Have you reviewed internal tobacco industry documents as part of your**
5 **research?**

6 A: Yes, I have, although when I began the project at the end of the 1980s, there were
7 few archival materials available to evaluate the role of the tobacco industry in relation to
8 the promotion of cigarettes, the science of tobacco and medical research, and American
9 politics. As a result of the recent tobacco litigation and the discovery of millions of pages
10 of company material now in the public domain, I have had the opportunity to extensively
11 investigate the tobacco industry's reaction and response to scientific data implicating
12 cigarettes as an important cause of serious disease as well as their ongoing efforts to deny
13 and obfuscate the emerging science of the harms of smoking.

14 **Q: Before we come back to the subject of the tobacco industry, let's talk a bit**
15 **more about your professional background. Have you received any honors and**
16 **awards?**

17 A: Yes. Over the course of my career, I have received a number of honors and
18 recognitions. In 1997, I was elected to the Institute of Medicine of the National Academy
19 of Sciences (IOM). The IOM is made up of individuals whose work has made important
20 contributions to medicine, science, and public health policy. There are only five other
21 historians whose work has been recognized in this way. Membership in the IOM is not,
22 however, exclusively honorific. Rather, members serve on committees and panels that
23 evaluate important aspects of medicine and public health.

1 I have also been elected to the American Academy of Arts and Sciences (AAAS).
2 The AAAS is the oldest academic society in the United States. It was founded in 1780 by
3 Thomas Jefferson and Benjamin Franklin among others and recognizes distinguished
4 figures in academic and public life.

5 In addition, I have received funding to support my research and writing from a
6 number of private foundations: these include the Rockefeller Foundation for the
7 Humanities, the Culpeper Foundation and the Burroughs-Wellcome Fund. These grants
8 have supported work on the history of cigarette smoking and other historical projects I
9 have been conducting.

10 In 2003, the Flight Attendants Medical Research Institute selected me as a Dr.
11 William Cahan Distinguished Professor, their highest honor. This award provides me
12 with research funding to pursue my work on the history of tobacco and public health
13 policy.

14 I have also been elected to membership in the Massachusetts Historical Society,
15 and I am a member of several historical professional associations including the American
16 Historical Association, the Organization of American Historians, the History of Science
17 Society, and the American Association for the History of Medicine. Each of these
18 organizations holds annual meetings, and I have been a frequent participant, delivering
19 papers and offering commentaries on other scholars' work.

20 **Q: Dr. Brandt, I'd like you to take a look at the document that has been marked**
21 **as U.S. Exhibit 78,546. Do you recognize this document?**

22 **A:** I do. This is a copy of my curriculum vitae as of October 2002.

23 **Q: Dr. Brandt, does exhibit 78,546 accurately reflect your professional**

1 appointments, fellowships and awards, professional service, University committees,
2 memberships, major research interests, current projects, books, articles and book
3 reviews as of October 2002?

4 A: It does.

5 Q: In order to bring us up to the present date, what additions are there to your
6 curriculum vitae as marked as exhibit 78,546?

7 A: The principal changes in my CV since October 2002 would be the addition of
8 several new publications:

9 Brandt, AM. "Difference and Diffusion: Cross-Cultural Perspectives on
10 the Rise of Anti-Tobacco Policies," in *Unfiltered: Conflicts over Tobacco*
11 *Policy and Health*, Eric A. Feldman and Ronald Bayer, eds. (Cambridge:
12 Harvard University Press, 2004);

13 Brandt, AM. "From Analysis to Advocacy: Crossing Boundaries as a
14 Historian of Health Policy," in *Locating Medical History: the Stories and*
15 *Their Meanings*, Frank Huisman and John Harley Warner, eds.

16 (Baltimore: Johns Hopkins University Press, 2004); and

17 Brandt, AM. "From Nicotine to Nicotrol: Addiction, Cigarettes and
18 American Culture," in *Altering American Consciousness: Essays on the*
19 *History of Alcohol and Drug Use in the United States*, Sarah W. Tracy and
20 Caroline J. Acker, eds. (Amherst: University of Massachusetts Press,
21 2004).

22 I also have two forthcoming publications:

23 Brandt, AM. "Engineering Consumer Confidence in the Twentieth

1 Century,” in *Smoke: A Global History of Smoking*, Sander L. Gilman and
2 Xhou Zun, eds. (London: Reaktion Books, forthcoming); and
3 Brandt, AM. “The First Surgeon General’s Report,” in *A Safer and*
4 *Healthier America: Public Health Achievements in the 20th Century*, John
5 W. Ward and Christian Warren, eds. (New York: Oxford University Press,
6 forthcoming).

7 In addition, I have served (or am currently serving) on several additional
8 committees at Harvard. These include the University Committee on Alcohol Use
9 (Faculty of Arts and Sciences), the Faculty Advisory Committee on Resources (Harvard
10 Medical School), the Harvard Medical School M.D./Ph.D. Committee in the Social
11 Sciences, and the Harvard Program in Ethics and Health (Steering Committee).

12 **Q: Dr. Brandt, in addition to publishing your written work, have you presented**
13 **your research through speeches and lectures?**

14 A: I have. I have spoken widely in the United States and abroad about my historical
15 work. Most recently, I gave the Edward Kass Lecture at the Wellcome Institute for the
16 History of Medicine in London. In addition, I have on occasion appeared in the media to
17 discuss my research and other questions relevant to the history of medicine. My work on
18 Tuskegee was featured in a segment of NOVA on PBS, and I have appeared in other
19 documentary films and news programming. I have, for instance, appeared on 20/20 to
20 discuss my work on STDs.

21 **Q: Have you ever testified as an expert witness before?**

22 A: I have not.

23 **Q: In any subject area, tobacco or otherwise?**

1 A: That is correct. I have never before testified in any litigation. Although in the
2 past both plaintiffs and defendants approached me to testify, I had been concerned that
3 the courtroom might not be the best context in which to present my historical findings.
4 My preference was to produce work on the history of tobacco and tobacco policy that
5 would be subject to traditional scholarly assessment and peer review. I did however
6 follow carefully the development of tobacco litigation through the 1990s. The litigation
7 was of considerable interest to me in part because the legal arguments depended on
8 historical assessments of scientific knowledge regarding the harms of smoking.
9 Moreover, it was of great importance to my research because it began to produce a
10 remarkable archive of industry materials on questions of great significance in the history
11 of cigarette smoking.

12 **Q: Why did you agree to serve as an expert witness in this case?**

13 A: In early 2002, lawyers for the US Department of Justice visited me at Harvard to
14 discuss the case and my possible involvement as an expert witness. Although I had
15 previously declined all such participation, in this instance I agreed to reconsider. The
16 government lawyers shared with me expert statements that had been prepared in the case
17 by historians of medicine (English, Ludmerer) and an American historian (Wilson) that I
18 found to be grossly inadequate and poorly researched. As a result, I reassessed my
19 position about testimony. By that time I had published a good deal about the history of
20 tobacco, so I believed any opinions I offered in the case could be evaluated against my
21 substantial record of publication.

22 **Q: Are you being compensated for the time you work on the case?**

23 A: I am. I am being compensated at a rate of \$350 per hour for my work on the case.

1 **Q: Before we discuss your specific opinions, can you describe, generally, the**
2 **work of a professional historian?**

3 A: Yes. I think it is appropriate as a general description to say that historians are
4 committed to developing sophisticated explanations of the events of the past. We are
5 eager to produce narratives of past occurrences and peoples that are comprehensive and
6 nuanced. In seeking to understand historical change, we make sure to take into account
7 the range of important variables. If historical methods are systematically and rigorously
8 applied, it is possible to arrive at interpretations and conclusions that are both persuasive
9 and authoritative, and that meet professional standards of evidence and objectivity.

10 **Q: Do historians specialize in certain areas within the field of history?**

11 A: Yes. Although historians do possess a series of common approaches to historical
12 change, as in most academic fields, there is a good deal of specialization among
13 historians today. A specific area of inquiry becomes an important basis for our research
14 and writing, and we gain familiarity and depth of knowledge in our particular area of
15 expertise.

16 **Q: Can you give me an example of an area of specialization?**

17 A: Yes, I can. The history of science and medicine is an example of this
18 specialization. Historians of medicine and science like myself have come to focus our
19 studies on the nature of scientific and medical change. We are especially interested in
20 how scientific knowledge is developed and the impact it has on the practice of medicine
21 and the public health policies. Further, we seek to understand the impact of medical
22 knowledge on patterns of health and disease. Just as a diplomatic historian of the 20th
23 century might not be familiar with materials associated with studying the Civil War, so in

1 the area of the history of medicine, a historian who specialized elsewhere would not have
2 the critical depth of knowledge necessary to fully interpret historical sources in the field.
3 It is crucial to have a strong background in the medical and public health literature, the
4 sociology of scientific practices, and the social context of scientific and medical change.
5 This training and experience is critical for establishing the specific contexts in which
6 historical events in medicine and science occur, as well as evaluating important aspects of
7 change and innovation.

8 **Q: How does a historian approach a historical issue like the health consequences**
9 **of smoking?**

10 A: Across the historical disciplines, there is actually considerable consensus about
11 the specific skills, methods, and orientations to historical research, argument, and
12 interpretation. Among the goals of historical research is to root events in the specific
13 times and cultures in which they occur, and therefore to evaluate source materials in the
14 specific context in which they were produced. In this respect, we work to avoid applying
15 the standards or values of our own times back into the past (what historians refer to as
16 presentism).

17 **Q: Does the evaluation of source materials involve anything more than the**
18 **collection and assembly of facts?**

19 A: Yes, much more. Historians do not simply collect facts (although we have great
20 interest in facts and truth). Rather, we are eager to account for the character of historical
21 change and to develop sophisticated and comprehensive explanations that elucidate the
22 range of forces affecting change over time. This requires us to develop precisely-framed
23 questions that are broadly analytic and to develop carefully reasoned and substantiated

1 conclusions based on relevant evidence. Our conclusions must be explicitly directed to
2 the questions that we pose. For example, a historian might research the causes of the
3 Civil War. Such a project, however, would require the framing of a series of explicit
4 questions about those factors that are presumed (at the outset of the investigation) to be
5 significant. How would the recognition that there are multiple causes be assessed? And
6 on what basis will each possible cause be evaluated for its relative significance? The
7 character of the questions framed will in part dictate the research agenda.

8 **Q: Can you provide an explanation of what you mean when you indicate that**
9 **“the character of the questions framed will in part dictate the research agenda”?**

10 A: Certainly. Historical interpretations are based on an extensive process of
11 collecting evidence and its critical and careful evaluation. In conducting historical
12 research it is crucial to examine the widest range of materials from diverse sources.
13 Otherwise, making important historical judgments about the representativeness and
14 relevance of particular sources becomes extremely problematic. No historian can
15 possibly review all the materials associated with a particular investigation. This is
16 especially true in research on 20th-century topics where there is often a profusion of
17 potentially relevant materials. Nonetheless, it is important in evaluation of the quality of
18 a historian's conclusions to ask if they are adequately comprehensive in their research
19 approach to well-framed questions.

20 **Q: How do historians address new materials that are identified for an area of**
21 **research?**

22 A: Historians continually test their understanding and interpretations against new
23 materials. With each new document they recover and review, they make an assessment

1 of how it sustains, modifies, or contradicts their current understanding of the question
2 they are investigating. Evidence that appears to contradict any particular interpretation is
3 crucial and needs to be explained fully. Since historians focus their work on change over
4 time, it is important that they introduce themselves to a wide range of sources in both the
5 published and unpublished literatures over an appropriate expanse of time. Historians
6 typically begin a project by identifying those primary source documents—materials
7 produced by historical actors at specific points of time—that will be critical to their
8 investigation and dependent on their particular questions. This strategy permits them to
9 assess a public record and public knowledge in light of what historical actors were doing
10 and saying privately and informally among colleagues and confidantes.

11 **Q: Does a professional historian bring expertise to these assessments?**

12 A: Yes. Historians develop considerable expertise in the analysis of different types
13 of historical sources. They work to locate and contextualize any particular document
14 under investigation.

15 **Q: How is this accomplished?**

16 A: As one example, a scientific article published in a medical journal will be
17 critically reviewed in specific ways. What are the characteristics of the particular journal
18 and what is its significance? Who reads this particular journal? What are the processes
19 of publishing (peer review, specialists, etc.)? On the other hand, archival memoranda and
20 letters would be scrutinized in different ways. Who is the author and what is his or her
21 standing in the institution in question? Who is the audience for the document? What
22 does the document reveal about its author and his/her perspective? Without careful
23 contextualization, these questions would be difficult to answer fully and correctly.

1 **Q: Are secondary sources also a part of historical investigation?**

2 A: Yes, they are. Historians utilize what are commonly called secondary sources
3 when seeking to develop a comprehensive understanding of what other historians and
4 scholars have previously written about the area they are investigating. Such secondary
5 sources offer important guides into primary materials, as well as an indication of
6 prevailing historical interpretations and arguments. These materials offer an opportunity
7 as well to see how primary sources have been effectively used, and where additional
8 research is required. Finally, in critically assessing secondary sources, historians
9 frequently identify new and unexplored questions for additional research.

10 **Q: In historical investigation, what follows the identification of questions and**
11 **the conduct of research?**

12 A: Following the development of explicit questions and comprehensive research,
13 historians typically develop interpretations and conclusions that are directly responsive to
14 the questions at hand. This process of developing and presenting arguments is a central
15 aspect of historical reasoning and scholarship. We are generally interested not only in
16 what happened, but why it happened in the way it did. Our ability to offer persuasive
17 accounts of historical developments rests heavily on our effective use of evidence (based
18 upon research) and our ability to marshal this evidence in support of interpretive claims
19 and generalizations. Ultimately, peers critically evaluate historians' interpretations as
20 presented in books, scholarly journals and public forums. It is one thing to hold a
21 particular historical position, quite another to seek its publication where it will receive
22 critical assessment. Peer review, therefore, is a crucial aspect of historical work because
23 it subjects our arguments, findings, and interpretations to the scrutiny of accomplished

1 and proficient scholars and the public.

2 **Q: How have you framed questions in your own work on the history of cigarette**
3 **smoking in the United States?**

4 A: I began this project as a result of my assessment of the impact that cigarettes have
5 had on patterns of disease over the course of the last century. I felt it would be important
6 to understand from a historical viewpoint the emergence of cigarette smoking as a
7 popular behavior, the rise of medical and scientific understandings of the harms caused
8 by smoking, and the responses to this knowledge on the part of the tobacco industry, and
9 public health officials. When I began this work in the 1980s, it had already become very
10 clear that tobacco had a dramatic impact on patterns of disease in the twentieth century.
11 As a result, I was eager to understand several important historical questions. First, when
12 and how had cigarette smoking become such a popular behavior in American society?
13 Second, what was the nature of scientific knowledge about the harms of smoking during
14 the course of the twentieth century? Third, how did this knowledge change over time and
15 what were the processes of its development? Fourth, what was the relationship of
16 scientific knowledge to public policy and regulatory initiatives?

17 I was also eager to understand the character of the controversy about the harms of
18 smoking that came about in the 1950s. My question was not, was there a controversy,
19 but rather what was the nature of the controversy. Who were the parties engaged in the
20 controversy? What were their particular positions and interests? What were the
21 obstacles to resolving this controversy? What interests would be served by its resolution?

22 **Q: How have you addressed these questions?**

23 A: To approach these questions I have relied on explicit and specific historical

1 methodologies. Understanding the rise of cigarette consumption and its health
2 implications, as with any historical development, requires the collection and evaluation of
3 evidence and the development of careful conclusions that are fundamentally based on the
4 substantiating materials.

5 **Q: Can you describe, generally, that evidence?**

6 A: Yes, I can. In my research I have attempted to be as comprehensive as possible. I
7 have reviewed a large volume of published and unpublished source materials, both
8 primary and secondary. In the case of cigarette smoking these materials range from
9 papers in medical journals, the popular press, public health reports, newspapers,
10 advertisements, and other documents produced by the industry, by the government, and
11 other institutions. Since I have been investigating the history of cigarette smoking and its
12 health impacts for more than a decade, I have now had the opportunity to read and study
13 closely an expansive literature, as well as review many archival materials.

14 **Q: Can you describe the sources for these materials?**

15 A: Yes. When I began this project, among the first places I did research was the
16 National Archives. I had considerable experience working with materials in the National
17 Archives from my earlier historical investigations of the history of sexually transmitted
18 diseases. The National Archives housed the archival materials from the 1964 Surgeon
19 General's Advisory Committee, and I spent a good deal of time utilizing these documents
20 to account for the development of the Surgeon General's Report of 1964. In 1986, I also
21 visited the Tobacco Institute, located in Washington, D.C., to investigate if they
22 possessed historical materials that would assist in my research. At that time, an employee
23 of the Tobacco Institute explained that their materials were not open to outside

1 researchers. But as a result of subsequent litigation and materials discovered in this case,
2 there is now a remarkable volume of internal industry material that sheds important light
3 on the history of research into the health risks associated with tobacco; the strategies of
4 the industry for marketing cigarettes; as well as the industry's internal and sponsored
5 research programs. As part of my research, I have spent considerable time reviewing and
6 analyzing these documents. In the course of my historical investigations on the history of
7 tobacco I have utilized a number of additional, important archival collections, including
8 those of Harvard University (William Cochran); the Countway Library at Harvard
9 Medical School (J. McKeen Cattell), the University of Maine (C.C. Little); Washington
10 University, St. Louis (Evarts Graham); the Wisconsin Historical Society (Bruce Barton,
11 John W. Hill, Robert Lasch, M.V. O'Shea); the Alan Mason Chesney Medical Archives
12 at the Johns Hopkins Medical Institutions (Lewis Robbins); University of Washington,
13 Seattle (Warren Magnuson); the Library of Congress (Edward Bernays, Harvey Wiley);
14 Yale University (Chester Bliss, Lester Savage); Duke University (the John W. Hartman
15 Center for Sales, Advertising and Marketing History); the Smithsonian (NC Ayer
16 Collection, The Warshaw Collection of Business Americana); the National Library of
17 Medicine (Stanhope Bayne-Jones); and the National Archives (The Surgeon General's
18 Advisory Committee).

19 **Q: Are there other archival materials that were relevant to your research?**

20 A: Yes. In the preparation of this testimony, as well as in my ongoing research on
21 the history of cigarette smoking, I have made extensive use of the on-line archives of
22 tobacco industry materials. These archives, which are searchable through a number of
23 web-sites, make accessible a wide-range of materials, both published and unpublished,

1 relating to tobacco in the twentieth century. Placed on the web following the litigations
2 of the 1990s, these collections include a vast number of internal industry correspondence,
3 reports, and memoranda on a range of industry activities and programs. Additionally, the
4 industry collected a wide array of published materials including medical, scientific, and
5 popular articles that are found in their records. According to most estimates, there are
6 more than 40 million pages of tobacco documents now available online. Unlike the
7 majority of non-digitized archival materials, these records are generally searchable
8 through the web. Among the main websites are: Tobacco Documents Online
9 (<http://www.tobaccodocuments.org>), which was set up by Michael Tadelovsky in 1999,
10 and the Legacy Tobacco Documents Library (<http://legacy.library.ucsf.edu>), which was
11 established at the University of California, San Francisco in 1994. Both of these websites
12 are grant-supported, primarily from the National Cancer Institute and the American
13 Legacy Foundation, respectively.

14 **Q: How are archives important to the work of a historian?**

15 A: Archival records are critical to historical work in a number of ways. Archival
16 collections typically hold correspondence, memoranda, minutes of meetings, and other
17 unpublished reports and documents which greatly amplify our research in published
18 materials. Through research in such manuscript collections historians gain insights into
19 the internal behind-the-scenes processes, planning, and activities of individuals and
20 institutions. In this way, such materials are utilized in historical research to deepen and
21 enhance our understanding of the logic of decision-making, planning and the deeper
22 contexts of issues than might be available in the public record. Archival materials
23 provide access to motivations, strategies, and actions not always available in printed

1 sources. Further, they provide another form of evidence in the rigorous development of
2 historical analyses, interpretations and opinions.

3 **Q: As a historian, how do you know when you have reached the point where you**
4 **have done enough research to form conclusions about a historical question?**

5 A: Quite often my doctoral students in the history of medicine and science come to
6 me and ask, “how will I know when I have done enough research—there is always more I
7 could do.” And there are, of course, always additional documents, sources and data
8 which could be researched, especially when one is investigating topics in the twentieth
9 century. As a general guide, I suggest that when new research begins to resubstantiate
10 themes for which an individual already possesses significant evidence, this is an
11 important indicator that one may be entering a final stage before writing and publication.
12 In other words, there may well be additional primary materials that a historian has not
13 reviewed, but if such materials can be understood according to arguments and themes that
14 the historian has developed, it is appropriate to move forward and report one’s
15 conclusions. Of course, new, unexplored materials may alter one’s view of what
16 happened and why. And in some instances important new materials may become
17 available that fundamentally shape and reshape our previous understandings of the past.
18 Historians need to be open to new materials which offer opportunities for re-interpreting
19 conventional historical conclusions. In this instance, for example, the relatively recent
20 accessibility of tobacco industry documents has offered important new opportunities to
21 understand more deeply and completely the history of medical and scientific debates
22 about smoking and health that would have been impossible prior to the availability of
23 these materials. Putting it in the context of this case, a critical question is what was

1 known within the industry? And how did industry actions and activities shape medical
2 and public knowledge about the harms of smoking? The defendants' historical experts
3 have entirely avoided these two critical questions. For example, it seems strikingly naive
4 from a professional historian's viewpoint to discuss what some have called "common
5 knowledge" of the harms of smoking without carefully analyzing cigarette
6 advertisements from the period under investigation. Additionally, a trained historian
7 would be eager to understand what the tobacco industry was saying about the risks of its
8 product as public knowledge came to be shaped. Based on traditional historical research
9 methods, it seems a striking omission to avoid the investigation of internal corporate
10 memoranda relating to the formation of the TIRC when one is investigating the
11 controversy about the harms of smoking in the 1950s.

12 **Q: If, as you suggest, context and social forces are important, do you also believe**
13 **that historical events are inevitable?**

14 A: No, I do not. Historians generally have a strong commitment to what they refer to
15 as contingency. By contingency we mean that historical events are not pre-determined or
16 inevitable, but rather they are the result of a combination of human action and social
17 forces that can be carefully studied and enumerated. Historians, therefore, often center
18 attention on important decisions and choices, on the rise of new knowledge and
19 technologies, on the role of institutions and organizations that have shaped and reshaped
20 the character of human knowledge, society, culture, and politics. One of the reasons that
21 I am an advocate for historical inquiry is that it clarifies the significance of such decisions
22 and their larger implications for subsequent historical developments and outcomes.

23 **Q: Has your research on the subject of cigarette smoking contributed to your**

1 **understanding of the methodology necessary for historical research?**

2 A: I think it is more accurate to say that my research has confirmed the importance of
3 examining diverse sources. For example, it was not difficult to find data on the changing
4 prevalence of tobacco use in the twentieth century. But explaining the rise of
5 consumption over time required careful inquiry into a wide range of forces—advertising
6 and promotion, changing social mores, and the biological and psychological aspects of
7 this particular behavior.

8 **Q: I'd like to turn to the substance of your opinions in this case. Let's start with**
9 **what you just mentioned – the rise of cigarette consumption over time. First, are**
10 **questions concerning cigarette consumption relevant to your historical analysis?**

11 A: Yes, they are, because changes in consumption led to changes in patterns of
12 disease, which in turn led to an increase in medical and scientific investigation of
13 cigarettes as a cause of disease. There was speculation about the connection between
14 smoking and disease even before the beginning of the last century, but scientists began to
15 give serious attention to the connection during the first half of the twentieth century.

16 **Q: Can you explain more specifically what prompted the serious attention to the**
17 **connection between smoking and disease at that time?**

18 A: I can. By the 1930s and 1940s, physicians and public health officials in the
19 United States had widely noted an alarming increase in numbers of cases of lung cancer.
20 Virtually unknown as a cause of death in 1900, by 1935 there were an estimated 4,000
21 deaths. A decade later, such estimates had nearly tripled. By 1950, lung cancer deaths
22 among men had surpassed prostate, colon, and stomach cancers. As this trend became
23 apparent in the first half of the twentieth century, it generated a number of theories

1 among scientists, physicians, public health officials, and actuaries.

2 **Q: What types of theories were generated during this time period?**

3 A: Some attributed the rise in cases to better reporting, more sophisticated diagnostic
4 abilities, the widespread use of x-rays, and the ability to make precise pathological
5 analyses. Others suggested that increasing life expectancy permitted the development of
6 diseases that in an earlier era would not have had the chance to kill individuals who
7 would die earlier from other causes. Still others speculated that the rise of the
8 automobile, asphalt pavement, or other environmental changes had precipitated this
9 increase in rates of lung cancer. All during this period, however, some physicians and
10 scientists pointed to the dramatic rise in cigarette smoking as a possible cause.

11 **Q: Was the rise in cigarette consumption documented?**

12 A: Yes, it was. The rise in lung cancers had followed the dramatic increase in
13 cigarette consumption beginning early in the twentieth century. Yearly per capita
14 consumption of cigarettes in 1900 had stood at approximately 49; by 1930, per capita
15 consumption was already over 1,300; by 1950 it would be over 3,000. Even though the
16 increases in lung cancer cases and deaths substantially lagged this increase in cigarettes
17 use, it led to considerable speculation about this relationship.

18 **Q: Was this the first time that the relationship had been suspected?**

19 A: No, it was not. Concern about the health consequences of smoking cigarettes –
20 and their possible relationship to cancer – was longstanding. But the way in which it was
21 comprehensively examined as a result of the dramatic rise in the number of lung cancer
22 cases was very different from prior speculation, as I will explain. The medical literature
23 in the nineteenth century is replete with clinical descriptions of smokers' heart, smokers'

1 cough, respiratory and other ailments, all attributed to cigarette smoking. Most such
2 studies relied – as did much of the medical literature of the time – on anecdote and
3 clinical observation. As a result, from this literature it was difficult to assess the precise
4 character of the risks smoking posed. A reasonable clinical assessment of such literature
5 typically resulted in the clinical maxim: some patients should not smoke.

6 Theories associating smoking with cancers were based, in part, on early and
7 ongoing research into the biological processes of carcinogenesis. As early as the late
8 eighteenth century, Percival Pott, a London surgeon, had noted the high incidence of
9 scrotal cancer among chimney sweeps. By the late nineteenth century, a number of
10 substances including shale oil, coal distillates and petroleum products had been linked to
11 skin cancers. By the late 1920s and early 1930s, E. L. Kennaway, the Director of the
12 Chester Beatty Research Institute at the Royal Cancer Hospital in London, had identified
13 polycyclic hydrocarbons as among the active chemicals in carcinogenesis.

14 **Q: You said that the examination of the connection between smoking and lung**
15 **cancer was different from the early theories you've described. Can you explain that**
16 **for the Court?**

17 A: Yes. By the late 1920s the potential dangers of smoking began to attract more
18 concerted attention. Researchers began to focus on the specific health consequences of
19 smoking. As early as 1928, researchers conducting a large field study associated heavy
20 smoking with cancer, and their results were reported in the *New England Journal of*
21 *Medicine* as marked as U.S. Exhibit 39,010. In 1931, Frederick L. Hoffman, a well-
22 known statistician for the Prudential Insurance Company, tied smoking to cancer,
23 reporting his results in *Annals of Surgery*, as shown in U.S. Exhibit 63,597, which is a

1 copy of Hoffman's article. Hoffman assessed the basic methodological questions of such
2 research: issues of representativeness, sample size, and the construction of control
3 groups. All presented researchers with a series of complex problems, problems which
4 they were aware of and began to find ways to resolve.

5 In 1938, Raymond Pearl, the Johns Hopkins population biologist and
6 biometrician, published among the first significant statistical analyses of the health
7 impact of smoking in the journal *Science*, published on March 4, 1938 as it appears in
8 U.S. Exhibit 20,714. Pearl came to the conclusion that in individuals it was difficult to
9 assess the risks of such behaviors, especially when their impact was not immediate and
10 when many intervening variables also affected health. Therefore, he concluded, the only
11 precise way to evaluate their effect on health was to employ statistical methods after
12 collecting data on large groups. Comparing the mortality curves of smokers and non-
13 smokers, Pearl found that individuals who smoked could expect shorter lives.

14 **Q: Were there other investigations in the 1930s that, as a medical historian, you**
15 **consider to be important in the development of our understanding of the connection**
16 **between smoking and lung cancer?**

17 A: Yes, there were. Although many research questions were left to be resolved,
18 these early researchers began to consider the best ways to uncover proof of the
19 association between lung cancer and smoking. The first case control study that showed
20 the connection was published in Germany in 1939, and translated and reprinted in the
21 *Journal of the American Medical Association (JAMA)* the same year. In addition, noted
22 chest surgeons like Alton Ochsner in New Orleans and Richard Overholt in Boston drew
23 attention in the 1930s to their observations that patients with advanced lung malignancies

1 typically had smoked.

2 **Q: Dr. Brandt, I'd like you to take a look at U.S. Exhibits 63,595 and 63,596. Do**
3 **you recognize these documents?**

4 A: I do. The first one, 63,595, is the English translation of the German case control
5 study that I referred to, as published in *JAMA* in September 1939. The second, 63,596, is
6 Ochsner's 1939 article on his clinical observations.

7 **Q: Did Ochsner reach specific conclusions about the connection between**
8 **smoking and lung cancer in the document marked as U.S. Exhibit 63,596?**

9 A: Yes, he did. Ochsner and surgeon Michael DeBakey, assessing the increase in
10 cases of primary carcinoma of the lung concluded:

11 In our opinion the increase in smoking with the universal custom of inhaling is
12 probably a responsible factor, as the inhaled smoke, constantly repeated over a
13 long period of time, undoubtedly is a source of chronic irritation to the bronchial
14 mucosa.

15 **Q: How do you view the early studies and conclusions of Hoffman, Pearl and**
16 **Ochsner and their colleagues from a historical perspective?**

17 A: These early clinical and population observations of the impact of smoking are, in
18 retrospect, quite impressive. Almost all the risks that would come to be attributed to
19 smoking in the second half of the twentieth century had been well-documented – from a
20 clinical perspective – in the first decades of the century. Even the risks of passive
21 exposure to cigarette smoke had been well articulated. And yet, physicians and
22 researchers could not easily move from such observations to more powerful and
23 generalizable assessments of the specific causal relationship of smoking to disease.

1 Physicians such as Ochsner might well be convinced that tobacco had caused their
2 patients' malignancies, but the larger questions of cause and effect could not be
3 definitively resolved on the basis of such observations.

4 **Q: Did the observations nevertheless cause concern?**

5 A: Yes, they did. By the late 1940s there was adequate evidence linking the rise of
6 cigarette use to the rise in lung cancer incidence for the medical and public health
7 community, the tobacco industry, and the public to be highly concerned.

8 **Q: What do you rely on to identify that concern?**

9 A: The concern, for example, was clearly reflected in tobacco ads at that time.
10 Camel Cigarettes featured a series of ads through the last years of the 1940s and early
11 1950s such as that reproduced as U.S. Exhibit 63,556, proclaiming, "More Doctors
12 Smoke Camels Than Any Other Cigarette." Thinly veiled in such campaigns was the
13 notion that if a smoker had concerns about the impact of cigarettes on their health,
14 Camels offered a "safer" smoke. In this time frame, before the groundbreaking
15 epidemiological studies that began to appear in the late 1940s and 1950s, tobacco
16 advertising made cigarettes seem healthy. Throughout the 1930s and 1940s as new
17 evidence about the potential harms of smoking was developed, the cigarette advertising
18 responded by reassuring smokers (and potential smokers) concerning the use of their
19 particular brands. Lucky Strikes promised that their "toasting" process removed harmful
20 irritants; Old Golds, in the advertisement marked as U.S. Exhibit 63,562, assured "not a
21 cough in a carload." The Camel ads announcing "More Doctors Smoke Camels than any
22 other cigarette" also touted the "T-Zone" for taste and throat: "only your taste and throat
23 can decide which cigarette tastes best for you... how it affects your throat" such as in the

1 advertisement marked as U.S. Exhibit 63,554. Other examples included Chesterfields,
2 which advertised “Pure...from start to finish! The cleanest ‘bill of health’ any cigarette
3 could rate” (early 1930s, marked as U.S. Exhibit 63,560), Lucky Strike, which
4 proclaimed “‘It’s toasted’ No Throat Irritation-No Cough” (1929, marked as U.S. Exhibit
5 63,564) and “Luckies employ the exclusive ‘Toasting’ process to remove certain irritants
6 found in all tobacco.... A Light Smoke Easy On Your Throat – ‘It’s Toasted’” (1937,
7 marked as U.S. Exhibit 63,558), Philip Morris, touting “Perfect smoking pleasure without
8 smoking penalties” (1940s, marked as U.S. Exhibit 63,566) and “...the ONLY leading
9 cigarette scientifically proved far less irritating to the nose and throat” (1947) and Camel,
10 which promoted to consumers a “30 day personal test... Noted throat specialists...report
11 ‘Not one single case of throat irritation!’” (1949, marked as U.S. Exhibit 63,552).

12 **Q: You indicated that the larger questions of cause and effect could not be**
13 **definitively resolved on the basis of observations by physicians such as Ochsner.**

14 **Can you explain why you feel that such observations were not sufficient to do so?**

15 A: Ochsner’s clinical observation that among his patients with lung cancer virtually
16 all had been smokers certainly raised important questions about the relationship between
17 smoking and health. But such observations were not made in a systematic way, and they
18 left a number of important questions open. For example, perhaps these individuals had
19 some other exposure or common experience that might account for their disease. Perhaps
20 they were especially heavy smokers. Perhaps they were unusual individuals who were
21 for some genetic or other reason especially vulnerable to the inhalation of cigarette
22 smoke.

23 Without conducting a systematic, rigorous study that permitted the comparison of

1 smokers to non-smokers, it simply would not be possible to address effectively the
2 hypothesis that smoking was causally related to lung cancer and other diseases. This
3 need for systemic study, of course, is not to deny the critically important clinical
4 observations made by Ochsner and other physicians that led researchers to scientifically
5 evaluate the hypothesis. As has so often been the case in the history of medicine, acute
6 clinical observations were the critical starting point for raising hypotheses of great
7 medical and public health significance.

8 **Q: Did researchers address the larger questions of cause and effect in this same**
9 **time period?**

10 A: Yes, they did. Beginning in the late 1940s researchers began to devise studies that
11 would directly address and resolve the persistent and increasingly important questions
12 concerning the possible harms of cigarette smoking.

13 **Q: Can you describe these studies?**

14 A: Yes. One of the early notable investigations was undertaken by Evarts Graham
15 and Ernst Wynder. Graham, a leading surgeon at Barnes Hospital in St. Louis, and
16 Wynder, then a medical student at Washington University in St. Louis, designed and
17 implemented such a study in 1948. Graham, a nationally-known surgeon who had
18 performed the first pneumonectomy, was a heavy smoker himself and skeptical of the
19 cigarette-lung cancer hypothesis. He initially had speculated that if smoking was a cause
20 of lung cancer it would occur more bilaterally (rather than in a single lobe). Wynder and
21 Graham collected extensive data on a group of 684 patients with lung cancer located in
22 hospitals throughout the U.S. These patients were extensively interviewed about their
23 smoking levels and histories. Histological exams confirmed the diagnosis in all cases.

1 This group was then compared to a “control group” of non-smokers, similar in age and
2 other demographic characteristics.

3 **Q: Did Wynder and Graham report the results of their study?**

4 A: They did. The results were reported in the *Journal of the American Medical*
5 *Association*, a prestigious peer reviewed journal, on May 27th, 1950.

6 **Q: Please take a look at U.S. Exhibit 63,605. Do you recognize this document?**

7 A: Yes. This is a copy of Wynder and Graham’s May 27th, 1950 article in *JAMA*, as
8 I have just described.

9 **Q: In your opinion, did Wynder and Graham reach conclusions that were**
10 **significant to the development of a scientific consensus that smoking is a cause of**
11 **lung cancer?**

12 A: They did. Wynder and Graham noted that lung cancer could occur among non-
13 smokers and that heavy smokers did not necessarily develop cancer. Therefore they
14 reasoned that “smoking cannot be the only etiological factor in the induction of the
15 disease.” Nonetheless, they explained, “the temptation is strong to incriminate excessive
16 smoking, and in particular cigarette smoking over a long period as at least one important
17 factor in the striking increase of bronchogenic carcinoma.” They offered four reasons to
18 support this conclusion. First, it was very unusual to find lung cancers among non-
19 smokers. Second, among patients with lung cancer, cigarette use tended to be high.
20 Third, the distribution of lung cancer among men and women matched the ratio of
21 smoking patterns by gender. And finally, “the enormous increase in the sale of cigarettes
22 in this country approximately parallels the increase in bronchogenic carcinoma.”

23 **Q: Was the work of Wynder and Graham recognized at the time to be**

1 **qualitatively different from the prior observations of Ochsner and other physicians?**

2 A: It was. In fact, also included in the issue of the *Journal* with the results reported
3 by Wynder and Graham was another investigation reaching similar conclusions by
4 Morton Levin and colleagues. In his commentary on research into the connection
5 between cigarettes and lung cancer, Levin compared the current epidemiological research
6 on cigarette smoking to research on the smoking/lung cancer connection done in the
7 preceding 20 years, arguing that the past work was "inconclusive because of lack of
8 adequate samples, lack of random selection, lack of proper controls or failure to age-
9 standardize the data." In the case of the data gathered for his study, careful attention to
10 "excluding bias" had been central, and Levin wrote: "...in a hospital population, cancer of
11 the lung occurs more than twice as frequently among those who have smoked cigarets for
12 twenty-five years than among other smokers or nonsmokers of comparable age."
13 At this point, Levin and colleagues were appropriately cautious in drawing causal
14 conclusions, but nonetheless these methodologic approaches would be central to
15 resolving the causal hypothesis.

16 **Q: Dr. Brandt, are you familiar with the document marked as U.S. Exhibit**
17 **63,606?**

18 A: I am. This is a copy of the Levin piece in *JAMA*.

19 **Q: Were other researchers doing work that you consider significant to the**
20 **resolution of the causal hypothesis in this time period?**

21 A: Yes, they were. Most notably, under the auspices of the Medical Research
22 Council, an independent research organization funded by the government in the United
23 Kingdom, A. Bradford Hill and Richard Doll conducted a similar study beginning in

1 1948. Following World War I, Hill had become one of the most distinguished medical
2 statisticians in Great Britain. Doll, a physician, also possessed sophisticated training in
3 statistics and epidemiologic methods. Eager to investigate the rising incidence of lung
4 cancer, they realized that questions concerning the causality of systemic chronic diseases
5 would not readily succumb to experimental laboratory investigation.

6 With the rise in incidence of systemic chronic diseases such as cancer and heart
7 disease widely noted by the 1940s, it became readily apparent that there would be
8 important limitations to laboratory experimental investigation. First, unlike the study of
9 infectious disease where the concept of specific causality had proven so important, in the
10 study of systemic chronic disease a single specific cause of disease could not typically be
11 isolated and studied under laboratory conditions. Unlike the search for microbes, which
12 had dominated the medical sciences in the late 19th and early 20th centuries, researchers
13 began to look for a range of factors which significantly contributed to the prominent
14 diseases of mid-century. Finally, even in those unusual instances where a specific cause
15 of disease could be identified and isolated, there was no simple and obvious manner in
16 which to move laboratory observations to the study of pathogenesis in humans.
17 Nonetheless, the timeliness and public health significance of these questions demanded
18 immediate attention and the development of new knowledge.

19 **Q: Is Doll and Hill's research significant to your evaluation of smoking-related**
20 **disease as a medical historian?**

21 A: Yes, it is extraordinarily significant due to their findings, as well as the strength of
22 their conclusions about the connection between smoking and lung cancer, which
23 stemmed from the manner in which their investigation proceeded.

1 **Q: Can you explain the manner of their investigation in more detail?**

2 A: I can. As their data from lung cancer patients and the control group came in in
3 late 1948 and early 1949, it became clear to Doll and Hill that cigarettes were the crucial
4 factor in the rise of lung cancer. With data on almost 650 lung cancer patients, they
5 concluded that they had in fact found cause and effect. Even without the sophisticated
6 statistical analyses they employed, the findings were impressive: among the 647 lung
7 cancer patients entered into Doll and Hill's study, all 647 were smokers. They waited to
8 publicize their results, however, until they had additional data, further strengthening their
9 conclusions.

10 Notably, the conclusions reached by Doll and Hill were not based on mere
11 percentages of lung cancer patients who were smokers. They understood that it would be
12 easy to dismiss such findings – as the tobacco industry would try – as “merely” statistical.
13 As a result, they meticulously described the specific criteria that they required before an
14 “association” could be identified as a genuine causal relationship. First, they worked to
15 eliminate the possibility of bias in the selection of patients and controls, as well as in
16 reporting and recording their histories. Second, they emphasized the significance of a
17 clear temporal relationship between exposure and subsequent development of disease.
18 Finally, they sought to rule out any other factors that might distinguish controls from
19 patients with disease. This explicit search for possible “confounders” and their
20 elimination marked a critical aspect of their arrival at a causal conclusion. They insisted
21 on carefully addressing all possible criticisms and all alternative explanations for their
22 findings. In this respect, Doll and Hill and the other epidemiologic investigators
23 expressed a strong commitment to investigatory science, hypothesis-testing, and

1 scientific method.

2 **Q: Dr. Brandt, please review U.S. Exhibit 63,604. What is this document?**

3 A: This is a copy of the *British Medical Journal* article where Doll and Hill
4 presented their findings in 1950. In their own words, they explained: "Consideration has
5 been given to the possibility that the results could have been produced by the selection of
6 an unsuitable group of control patients, by patients with respiratory disease exaggerating
7 their smoking habits, or by bias on the part of the interviewers. Reasons are given for
8 excluding all these possibilities, and it is concluded that smoking is an important factor in
9 the cause of carcinoma of the lung."

10 **Q: In your opinion, did the 1950 conclusions of Doll and Hill withstand**
11 **subsequent scientific evaluation?**

12 A: Absolutely. In fact, the conclusions were confirmed by Doll and Hill themselves.
13 Two years later, in a follow-up report, they offered additional evidence for sustaining
14 their conclusion, again fully considering alternative explanations when they reported in
15 the *British Medical Journal* in 1952, as reproduced as U.S. Exhibit 63,603: "We have
16 now extended the investigation to other parts of the country and have made more detailed
17 inquiries into smoking habits. . . . The present analysis of nearly 1,500 cases, or more
18 than double the number dealt with in our preliminary report, supports the conclusion then
19 reached and has revealed no alternative explanation – for example, in the use of petrol
20 lighters. It has been suggested that subjects with a particular physical constitution may
21 be prone to develop (a) the habit of smoking and (b) carcinoma of the lung, and that the
22 association might therefore be indirect rather than causal (Parnell, 1951). We know of no
23 evidence of such a physical constitution characteristic of patients with lung carcinoma. If

1 it does exist we should still have to find some environmental factor to account for the
2 increased incidence of the disease in recent years.”

3 **Q: Are there other investigations that you consider to be significant to the**
4 **smoking and health question in the same time period?**

5 A: There are. For instance, like Doll and Hill, Wynder and Graham quickly followed
6 their findings with additional investigations.

7 **Q: As a medical historian, how do you view the importance of these follow-up**
8 **studies for our understanding of the connection between smoking and lung cancer?**

9 A: These additional investigations are important for the historical analysis of the
10 formation of scientific consensus, because no single study would carry the day in
11 conclusively demonstrating the causal relationship between smoking and cancer. Rather
12 it was the aggregation of similar repeated studies with consistent findings that together
13 would build a convincing case.

14 **Q: What additional studies, if any, do you consider significant in building a**
15 **convincing case that smoking was a cause of lung cancer during this time period?**

16 A: Other retrospective studies in this period included that of Levin, mentioned
17 previously, investigations by Schrek, Baker and colleagues, by Mills and Porter, and by
18 Sadowsky, Gilliam and Cornfield. And perhaps most notably, Doll and Hill sought to
19 confirm the findings of their retrospective study through prospective investigation.

20 **Q: What, specifically, is a retrospective study?**

21 A: A retrospective study is one that starts with a group of individuals who have been
22 identified as having the condition under investigation. These individuals are then
23 carefully interviewed and examined to confirm their diagnosis. Interviewers

1 systematically collect data, interested in every aspect of their histories. In order to
2 determine if there were particular reasons why these individuals became sick with their
3 particular disease, the researchers collect data on a group of individuals who are similar
4 in every respect except for the noted disease. In other words, the group of healthy
5 individuals are the same age, gender, socio-economic status, and other key variables to
6 the group being investigated. These studies are called retrospective (or historical or case
7 control) because they look back on individual's experience after they have already
8 become ill.

9 It was precisely this approach that was taken in the original studies by Doll and
10 Hill and Wynder and Graham. What they found was that the only difference between
11 their study group of individuals with lung cancer and the group of individuals who did
12 not have lung cancer was that the lung cancer patients had been smokers. Although all
13 the researchers well understood that a small number of lung cancer patients never
14 smoked, this was true only in exceptional instances. Retrospective studies are understood
15 to have some limitations, of which the researchers were well aware. In particular, in such
16 studies there is concern about the potential bias of the sick individuals in reporting their
17 health histories and behaviors. For example, it was suggested that patients with lung
18 cancer might exaggerate the duration and daily level of smoking. There were also
19 concerns that researchers could be biased in their conduct of interviews and collection of
20 data. It was for this reason that Doll and Hill did not reveal the diagnosis to their
21 research assistants who collected the data. Doll and Hill, especially expert in their
22 research and methodological skills, worked assiduously to assure that they had identified
23 – and eliminated – potential sources of bias in their studies.

1 **Q: You indicated that “Doll and Hill sought to confirm the findings of their**
2 **retrospective study through prospective investigation.” Can you explain how they**
3 **did so?**

4 A: They designed and initiated a prospective investigation. This study sought data
5 concerning smoking from some 40,000 British physicians, who would then be followed
6 to see if they developed lung cancer. Unlike case control studies that begin with
7 individuals who are already sick, prospective studies (also known as cohort studies) begin
8 with two groups selected for their similarities except for a single variable, in this case
9 cigarette smoking. These two groups are then followed to see who develops any
10 particular disease. While the retrospective studies began with lung cancer and identified
11 cigarette smoking as the principal factor, the prospective studies began with cigarette
12 smoking as the variable and found lung cancer to be a significant outcome. As their
13 earlier studies had shown, they found an impressive “excess” of deaths among the doctors
14 who smoked. Heavy smokers had death rates 24 times higher than non-smokers did, as
15 Doll and Hill reported in the *British Medical Journal* in 1954 and 1956 in the articles
16 contained in U.S. Exhibits 63,612 and 63,611. Doll and colleagues have continued to
17 follow the morbidity and mortality of these physicians and in June 2004 published an
18 original article in the *BMJ* on 50 years of observations showing that prolonged cigarette
19 smoking tripled age-specific mortality rates. The long-term follow-up also demonstrated
20 that quitting at any age confers health benefits.

21 **Q: As a medical historian, do you have an opinion as to the level of scientific**
22 **knowledge concerning smoking as a cause of lung cancer in the early 1950s?**

23 A: Yes, I do. By late 1953 there had been at least five published epidemiologic

1 investigations, as well as others pursuing carcinogenic components in tobacco smoke and
2 its impacts. The researchers had come to a categorical understanding of the link between
3 smoking and lung cancer.

4 **Q: Why do you conclude that the researchers reached a categorical**
5 **understanding of the link between smoking and lung cancer?**

6 A: The scientists using the epidemiological methods that showed smoking to be a
7 cause of lung cancer were careful to approach them in a thorough manner; these methods
8 were completely consistent with established scientific procedure and process. And
9 epidemiology was not only based on statistics, but instead was an interdisciplinary,
10 applied field. The studies had substantially transformed the scientific knowledge base
11 concerning the harms of cigarette use. Unlike earlier anecdotal and clinical assessments
12 these studies offered approaches to investigating and resolving causal relationships.
13 Indeed, medical historians would come to view these studies as among the most
14 important contributions to public health and medicine in the twentieth century. They
15 offered a sophisticated scientific methodology for resolving central questions of causality
16 and efficacy. Indeed, it was these methods that would be utilized to evaluate the
17 effectiveness of new drugs or other medical therapies.

18 As noted historian Charles Webster would later observe of the first Doll and Hill
19 paper, published in 1950: "This modest paper is now regarded as a classic. From these
20 findings emerged the realization that smoking has been responsible for as many deaths
21 per annum as were claimed by the great cholera epidemics of the nineteenth century.
22 Smoking was thus established as a major cause of preventable disease." Webster was
23 writing in the *British Journal of Addiction* in 1984, marked as U.S. Exhibit 63,589.

1 **Q: Had these studies attracted any attention outside of the scientific community**
2 **by 1953?**

3 A: They had. By 1953, the importance of such findings attracted considerable
4 interest among physicians, scientists, public health officials, and, of course, the public.
5 Newspapers and magazines widely reviewed these investigations, heightening both
6 public concern about the cigarette and industry concern about its future.

7 **Q: U.S. Exhibit 63,549 is a copy of a *Reader's Digest* article titled "Cancer by the**
8 **Carton" and U.S. Exhibit 63,548 is an article from *Time* titled "Beyond Any Doubt."**
9 **Have you seen these articles before?**

10 A: I have. These are examples of the type of publicity the groundbreaking
11 epidemiological investigations received outside of the scientific community.

12 **Q: Based on your work as a historian studying tobacco and disease, do you**
13 **believe that the public review of these investigations impacted cigarette**
14 **manufacturers?**

15 A: Yes. The public reporting of these new findings in national magazines like *Time*
16 and *Reader's Digest*, as well as declines in sales and stock prices, forced tobacco
17 executives to assess strategies for responding to growing medical and public concerns
18 about their product.

19 **Q: Have you formed opinions concerning the impact that these studies had on**
20 **the tobacco industry in the United States?**

21 A: I have. The scientific findings identifying cigarette smoking as a cause of serious
22 disease – and their reporting in the public media – shook the tobacco industry. For
23 decades the industry had developed advertising and public relations strategies for dealing

1 with ongoing concerns about the health impact of smoking. By 1953, however, it had
2 become abundantly clear that the character and quality of the evidence implicating
3 cigarette smoking as a factor in carcinogenesis was of a different order. The major
4 tobacco companies found themselves in a state of crisis. In this respect, the actions of
5 company executives reflected an understanding that these new reports were substantially
6 different from the ongoing health concerns raised about their product in the past. These
7 new findings constituted a critical threat to their industry.

8 **Q: What actions, in your opinion, demonstrate an understanding on the part of**
9 **company executives “that the new reports were substantially different from the**
10 **ongoing health concerns raised about” cigarettes previously?**

11 A: Initially, as scientific evidence of the harms of smoking accrued, aggressive and
12 reassuring marketing persisted. Arthur Godfrey, for example, who promoted
13 Chesterfields on television, touted studies in 1953 which he claimed exonerated
14 Chesterfields from the rising public concerns about the health implications of smoking.
15 But the scientific studies demonstrating the causal connection between smoking and lung
16 cancer generated a heightened level of concern among major manufacturers. To say that
17 executives and other employees of the tobacco industry were aware of the studies and
18 their findings linking cigarettes and cancer is an understatement. These findings created
19 an unprecedented crisis for the industry. By 1953-1954, executives in the industry were
20 aware both of these findings and the public attention they were receiving, and their
21 statements and actions reflected an understanding that this new scientific evidence
22 constituted a full-scale crisis for their respective corporations.

23 **Q: Are there particular statements that you believe illustrate the industry’s view**

1 **of the new scientific evidence as a full scale crisis?**

2 A: One example comes from George Weissman, a Vice President with Philip Morris,
3 who reiterated this view of the crisis publicly in March 1954 in a speech to the National
4 Association of Tobacco Distributors: "For never in the history of American industry – a
5 history that not so incidentally had its origins in tobacco – has one industry been under
6 attack as we are today, never has an industry's very existence been so dependent on its
7 relations with the public. . . . If we had any thought or knowledge that in any way we
8 were selling a product harmful to consumers, we would stop business tomorrow."

9 **Q: Dr. Brandt do you recognize U.S. Exhibit 21,766?**

10 A: Yes, I do. This is a copy of the text of Weissman's March 1954 speech.

11 **Q: And please examine U.S. Exhibit 59,809. Do you recognize this document?**

12 A: Yes.

13 **Q: Can you explain what U.S. Exhibit 59,809 is?**

14 A: This is a copy of a public statement from Paul Hahn, the President of American
15 Tobacco, in 1953 that also illustrates the industry's response to the new scientific
16 evidence. In the statement, Hahn noted the need to reassure the American public, stating:
17 "Believing as we do that cigarette smoking is not injurious to health, I feel that a
18 statement of reassurance to the public should be made. What the public wants to know
19 about is whether it is true that smoking has been proved to contribute to the incidence of
20 lung cancer. The fact, of course, is that it has not been so proved."

21 **Q: You mentioned that the actions of the cigarette companies at this time –**
22 **1953-1954 – reflected an understanding that the scientific evidence represented a**
23 **crisis for the industry. What actions do you rely on for this view?**

1 A: In December 1953, Paul Hahn called a meeting of all the major tobacco chief
2 executives. The meeting was attended by Paul M. Hahn, President of American Tobacco,
3 E. A. Darr, President of RJR, William J. Halley, President of Lorillard, Timothy V.
4 Hartnett, President of B&W, O. Parker McComas, President of PM, Joseph F. Cullman,
5 Jr., President of Benson and Hedges, J. B. Hutson, President of Tobacco Associates, Inc.,
6 J. Whitney Peterson, President of US Tobacco, and executives from the public relations
7 firm Hill and Knowlton. Only Liggett declined. The purpose of the meeting was to
8 develop a collaborative public relations plan in response to the new scientific evidence
9 concerning the harms of cigarette use. When they met together on December 14, 1953 at
10 the Plaza Hotel in New York City, it marked the first time since 1939 that the group had
11 come together. Executives of the tobacco companies had stopped meeting in 1939
12 following a conviction for price fixing. Now, however, their fear that working together
13 would be perceived as an anti-trust violation was trumped by their major concern over
14 public reactions to the emerging scientific findings.

15 The tobacco executives had agreed to meet with John Hill of the New York public
16 relations firm Hill and Knowlton in order to consider how best to shape their new
17 strategy in this moment of crisis. The following day, Hahn, McComas, Cullman and
18 Peterson met again and agreed to the program developed by Hill and Knowlton. A series
19 of additional meetings occurred in the following two weeks in order for Hill and
20 Knowlton executives to hear from other industry staff. Finally, on December 28, 1953,
21 the CEOs met again with Hill and his colleagues Bert Goss and Richard Darrow to
22 approve the formation of the Tobacco Industry Research Committee (TIRC) and its
23 public announcement.

1 **Q: Is there historical documentation of Hill and Knowlton's role in the tobacco**
2 **industry's response to the emerging scientific evidence?**

3 A: Yes there is. The John Hill papers at the Wisconsin Historical Society include
4 extensive records of the activities of Hill's public relations firm, Hill and Knowlton, and
5 their activities on behalf of the tobacco industry. After the CEOs of the companies
6 collectively hired Hill and Knowlton to conduct a public relations campaign on behalf of
7 the industry, members of the firm produced extensive memoranda, correspondence and
8 records documenting their efforts. At the time of the creation of the Tobacco Institute in
9 1958, Hill and Knowlton also secured this account to handle its public relations. The Hill
10 manuscript collection contains thousands of pages of correspondence, internal
11 memoranda, reports, and other materials relating to these important accounts. In the Hill
12 collection there are 112 archive boxes which comprise nearly 45 cubic feet.

13 **Q: How is this archive important to your research as a medical historian?**

14 A: These manuscript materials are characteristic of archival collections that
15 historians utilize to reach judgments and interpretations about historical actors and
16 episodes. In relation to other published source materials, they offer an internal view to
17 the logic of the actions and behaviors of particular individuals. In this instance, these
18 materials (which include clippings, drafts, and printed matter) provide a remarkably clear
19 picture of the industry and their public relations counsel during the tumultuous period
20 from 1953 to around 1966.

21 The papers have been in the possession of the Wisconsin Historical Society since
22 1964 when they were donated by John Hill. Client files, which include those of the
23 tobacco industry, were closed to research until 1989, and only became available for

1 research after they were organized in 1992.

2 **Q:** I'd like to show you U.S. Exhibits 21,152, 21,411, 87,211, 87,224 (and
3 duplicate 21,408) 87,512 through 87,515, 87,517 through 87,528, 87,533 through
4 87,543, 87,720 through 87,732, 87,968, 88,043, 88,166, 88,168, 88,170 through 88,176,
5 88,179, 88,180, 88,182 through 88,192, 88,194, 88,197, 88,205 through 88,208, 88,210
6 through 88,227, 88,229 through 88,233, 88,251, 88,253, 88,254, 88,363 through
7 88,375, 88,378 through 88,384, 88,386, 88,388 through 88,397, 88,399, 88,400, 88,402
8 through 88,404, 88,407 through 88,411, 88,419 through 88,423, 88,439 through
9 88,441, 88,454, 88,491 through 88,493, 88,564, 88,780, 88,169, 88,181, 88,195, 88,196,
10 88,198, 88,199, 88,201 through 88,204, and 88,361. Do you recognize these
11 documents?

12 **A:** Yes. All of these are papers from the Hill collection that document Hill and
13 Knowlton's activities on behalf of the tobacco industry, which, as I indicated, provide
14 valuable internal views to the logic of the actions and behaviors of individuals within the
15 tobacco industry.

16 **Q:** Do the Hill papers provide additional historical evidence of the assessment of
17 the threat that the scientific evidence posed to the industry?

18 **A:** They do. As an example contained in U.S. Exhibit 87,224 (and duplicate 21,408),
19 Hill and Knowlton assessed their clients' problems in the following manner in an initial
20 assessment:

21 There is only one problem – confidence, and how to establish it; public assurance,
22 and how to create it – in a perhaps long interim when scientific doubts must
23 remain. And, most important, how to free millions of Americans from the guilty

1 fear that is going to arise deep in their biological depths – regardless of any pooh-
2 pooing logic – every time they light a cigarette. No resort to mere logic ever
3 cured panic yet, whether on Madison Avenue, Main Street, or in a psychologist's
4 office. And no mere recitation of arguments pro, or ignoring of arguments con, or
5 careful balancing of the two together, is going to deal with such fear now. That,
6 gentlemen, is the nature of the unexampled challenge to this office.

7 In the same document, Hill and Knowlton warned their clients that competitive
8 approaches of the past would not work in the current context, advising: "...on this
9 problem none is going to seek a competitive advantage by inferring to its public that its
10 product is less risky than others."

11 **Q: Did Hill and Knowlton suggest an alternative to competitive approaches?**

12 A: They did. The tobacco executives sought to create a "Tobacco Industry
13 Committee for Public Information," to publicize health information and to preserve their
14 public image. Hill, however, expressed skepticism that a public relations strategy that
15 simply argued that the harms of cigarette smoking were "unproven" would succeed.
16 Such a campaign, it was suggested, might appear self-interested in the face of the serious
17 health concerns being raised. As a result, Hill suggested that the industry should sponsor
18 new research. Thus he advocated instead a "Tobacco Industry Research Committee"
19 (TIRC), which the executives adopted.

20 **Q: How did the Tobacco Industry Research Committee address the "problem"**
21 **identified by Hill and Knowlton in U.S. Exhibit 87,224, if at all?**

22 A: Beginning in January 1954, the newly created Tobacco Industry Research
23 Committee would take the lead in forging the industry's response to the scientific

1 evidence of tobacco's harms. That month the TIRC published "A Frank Statement to
2 Cigarette Smokers" (written by Hill and Knowlton executives), which appeared in 448
3 newspapers in 258 cities. The Frank Statement, as an act of public relations, fit well with
4 the essential strategy that Hill and Knowlton identified with the tobacco industry. It
5 reassured smokers; it promised them that the industry was absolutely committed to their
6 good health. Such reassurances became characteristic even as the scientific evidence
7 indicting cigarettes grew in strength, sophistication, and professional acceptance.

8 **Q: I'd like you to look at U.S. Exhibit 21,418. Do you recognize this document?**

9 A: I do. That is a copy of the Frank Statement, as it appeared in newspapers in
10 January 1954.

11 **Q: What was communicated by the Frank Statement?**

12 A: The statement announced:

13 We accept an interest in people's health as a basic responsibility, paramount to
14 every other consideration in our business.

15 We believe the products we make are not injurious to health.

16 We always have and always will cooperate closely with those whose task it is to
17 safeguard the public health.

18 Announcing the creation of the TIRC, the "Frank Statement" explained:

19 We are pledging aid and assistance to the research effort into all phases of tobacco
20 use and health. This joint financial aid will of course be in addition to what is
21 already being contributed by individual companies.

22 **Q: As a historian, do you look for sources to confirm the strategies that you have**
23 **identified as having been articulated in the Hill papers?**

1 A: Confirmation is valuable, and we find it in the statements of industry executives.
2 T.V. Hartnett, President of Brown and Williamson, summarized the crisis of the industry
3 on December 15, 1953, in the following terms in a document marked as U.S. Exhibit
4 20,190:

5 But cancer research, while certainly getting our support, can be only half an
6 answer. . . . The other side of the coin is public relations . . . [which] is basically a
7 selling tool and the most astute selling may well be needed to get the industry out
8 of this hole. . . . It isn't exaggeration that no public relations expert has ever been
9 handed so real and yet so delicate a multi-million dollar problem. . . . Finally, one
10 of the roughest hurdles which must be anticipated is how to handle significantly
11 negative research results, if, as, and when they develop.

12 **Q: Do you consider Hartnett to be a significant historical actor for these issues?**

13 A: Yes, I do. Upon retirement from Brown and Williamson, Hartnett would become
14 the first Chairman of the TIRC in 1954. He continued to advance the industry's position
15 in that role. In the document marked as U.S. Exhibit 63,544, which is the press release
16 announcing his appointment to the TIRC, Hartnett explained:

17 It is an obligation of the Tobacco Industry Research Committee at this time to
18 remind the public of these essential points:

- 19 1. There is no conclusive scientific proof of a link between smoking and cancer.
20 2. Medical research points to many possible causes of cancer...
21 5. The millions of people who derive pleasure and satisfaction from smoking can
22 be reassured that every scientific means will be used to get all the facts as
23 soon as possible.

1 **Q: Have you reviewed other sources to confirm the strategies identified in the**
2 **Hill papers?**

3 A: Yes I have. All of the relevant sources that I have examined, both published and
4 unpublished, have confirmed the tobacco industry's consistent adherence to the public
5 relations strategy devised and implemented by John Hill and his staff.

6 **Q: In your opinion, did the TIRC use scientific research for public relations**
7 **purposes?**

8 A: Absolutely. The TIRC deftly exploited scientific research for the purposes of
9 public relations. From the outset the dual functions of TIRC, public relations and
10 scientific research, were intertwined. The scientific program of TIRC was always
11 subservient to the goals of public relations. Rather than carefully and critically assessing
12 the emerging scientific data concerning the harms of smoking, the TIRC took the lead in
13 denying and distorting these harms. Instead of "getting all the facts" in a timely way, the
14 TIRC focused its energies and resources in two areas.

15 First, it served as a public relations unit for the industry, especially in relation to
16 growing public concerns about the risk of smoking. It repeatedly attacked scientific
17 studies demonstrating the harms of cigarette smoke. It worked concertedly to reassure
18 smokers about cigarettes.

19 Second, it ultimately developed a research program that focused principally on
20 basic science mechanisms in cancers. This program was distant if not completely
21 irrelevant to evaluating the risks and harms associated with smoking. The TIRC research
22 program was organized and devised to *not* address the immediate and fundamental
23 questions of the health effects of smoking.

1 In this way, both functions of TIRC (public relations and research) were integrally
2 related; both were fully committed to the goals of denying and discrediting the substantial
3 scientific evidence of smoking's harms and reassuring the public, especially smokers and
4 potential smokers.

5 **Q: In your opinion, were the public relations and research functions carried out**
6 **through TIRC different from the tobacco industry's public relations and research**
7 **activities prior to the founding of TIRC?**

8 A: Yes, they were. Prior to the formation of the TIRC, the industry had conducted
9 research on a somewhat *ad hoc* basis. Some of the research had been focused on the
10 competitive health claims that were central to the advertising campaigns. For example,
11 Philip Morris had hired researchers to investigate whether the smoke from their cigarettes
12 was "less irritating" than the smoke from other brands. There is no evidence that the
13 industry did anything to investigate the rising concerns through the 1930s and 40s about
14 the health effects of smoking. In the period prior to the Plaza Hotel meetings and the
15 formation of the TIRC many researchers advocated that the industry give funds to the
16 National Research Council, the American Cancer Society, or National Cancer Institute to
17 intensively study the relationship of smoking to disease. These individuals reasoned that
18 only an independent assessment would be publicly credible. But ultimately, the industry
19 would instead decide to set up its own research program under its own auspices and
20 control.

21 In this way, the industry (and Hill and Knowlton) were able to assert control over
22 the TIRC and its activities. The Scientific Director was selected by a group of Hill and
23 Knowlton executives and industry scientists. The executive director of the TIRC, W.T.

1 Hoyt, had no scientific background whatsoever; he was initially a Hill and Knowlton
2 employee. The first chairman of TIRC was Timothy Hartnett, the retired CEO of Brown
3 & Williamson. A legal committee, made up of industry lawyers, oversaw the operation
4 from its outset with particular attention to concerns about liability litigation. Hill and
5 Knowlton, on behalf of the industry, worked to assure that TIRC accomplished its
6 essential public relations mission; it was anything but an independent scientific research
7 organization dedicated to investigating the relationship of tobacco and health.

8 **Q: Have you looked to the cigarette manufacturers' internal scientific**
9 **documents as part of your consideration of whether the tobacco industry utilized**
10 **scientific research for public relations purposes through the TIRC?**

11 A: Yes, I have. Internal industry assessments of the potentially carcinogenic
12 characteristics of cigarette smoke stand in sharp contrast to public statements and
13 reassurances, and the discrepancies between industry science and public statements
14 support the conclusion that the industry's joint activities were undertaken for public
15 relations purposes.

16 **Q: What assessments, in particular, do you rely on to support your conclusion?**

17 A: In February, 1953, for example, in a document that has been marked as U.S.
18 Exhibit 21,407, Claude Teague, an RJ Reynolds research scientist, closely examined the
19 available data – clinical, biological, chemical and epidemiological – linking cigarette use
20 to human cancers and summarized clearly the state of existing knowledge:

21 Several statistical studies, based on clinical data, on cancer of the respiratory
22 system have been made, and these studies indicate an abnormal increase in the
23 incidence of such cancers, particularly among men, during the last several

1 decades.... There appears to be a growing suspicion, or even acceptance, among
2 medical men and cancer researchers that the parallel increase in cigarette
3 consumption and incidence of cancer of the respiratory system is more than
4 coincidence. The statistical studies continue, and their implications have become
5 the subject of much speculation....

6 CONCLUSIONS: The increased incidence of cancer of the lung in men which has
7 occurred during the last half century is probably due to new or increased contact
8 with carcinogenic stimuli. The closely parallel increase in cigarette smoking has
9 led to the suspicion that tobacco smoking is an important etiologic factor in the
10 induction of primary cancer of the lung. Studies of clinical data tend to confirm
11 the relationship between heavy and prolonged tobacco smoking and incidence of
12 cancer of the lung.

13 Alan Rodgman, a scientist at RJ Reynolds, drew similar conclusions in 1956. He
14 wrote an extensive paper on "The Analysis of Cigarette Smoke Condensate," that is
15 marked as U.S. Exhibit 20,667. In it, Rodgman explained:

16 The research described in this report represents a concerted effort to determine
17 whether or not the polycyclic aromatic hydrocarbons are present in cigarette
18 smoke condensate. One of the major objections offered to previous investigations
19 is that the identification of specific compounds solely on the basis of ultraviolet
20 absorption studies is not definitive. Since the present research describes the actual
21 isolation, identification, and characterization of several polycyclic aromatic
22 hydrocarbons, including the highly carcinogenic 3, 4-benzpyrene, the major
23 criticism of past research are now nullified...

1 Standard Camel cigarettes were utilized for these studies. Rodgman further wrote:

2 In view of this data, it is logical to assume that the carcinogenic activity of
3 cigarette smoke condensate is due to the presence of one or more carcinogenic
4 polycyclic aromatic hydrocarbons. . . .

5 Since it is now well-established that cigarette smoke does contain several
6 polycyclic aromatic hydrocarbons, and considering the potential and actual
7 carcinogenic activity of a number of these compounds, a method of either
8 complete removal or almost complete removal of these compounds from smoke is
9 required.

10 In 1959, in a document marked as U.S. Exhibit 21,249, Rodgman again summarized his
11 current research on known carcinogens in cigarettes:

12 Some thirty-odd polycyclic hydrocarbons have since been similarly characterized
13 in these laboratories. Of these eight are carcinogenic to mouse epidermis.

14 Cholanthrene, a potent carcinogen, is one of three not yet reported by other
15 investigators. In April of 1959, the first positive isolation and identification of 3,
16 4 benzpyrene, citing data similar to ours, was reported by other investigators.

17 **Q: Can you explain how internal assessments of the scientific evidence like those**
18 **cited from Rodgman and Teague support your opinions regarding the discrepancies**
19 **between industry science and public statements?**

20 A: The documents illustrate that at the same time that the industry assured the public
21 through its "Frank Statement" that "there is no proof that cigarette smoking is one of the
22 causes [of cancer]" it documented a large number of known carcinogens in its product.
23 At the same time that the industry announced "we accept an interest in people's health as

1 a basic responsibility, paramount to every other consideration in our business” it
2 established a sophisticated public relations apparatus – based on the “cover” of
3 conducting research – to deny the harms of smoking and reassure the public. Medical
4 and scientific knowledge concerning the harms of smoking--including cancer and
5 premature death--continued to grow impressively, in spite of a barrage of critiques and
6 distortions by industry spokespeople and the TIRC. But once the essential strategy was
7 organized and implemented in 1953-54, the industry's approach was unwavering.

8 **Q: Did the medical and scientific knowledge concerning the harms of smoking**
9 **grow during the period following the formation of TIRC?**

10 A: Yes, it did. While the industry structured its public response and developed its
11 own research plan, considerable new scientific evidence was developed during the course
12 of the 1950s and early 1960s.

13 **Q: What types of scientific evidence developed during this period?**

14 A: Much of the scientific investigation concerned animal testing and pathological
15 research. There was also a considerable expansion of the epidemiological evidence
16 confirming the health effects of smoking during this period.

17 **Q: I'd like to take each of the three areas in turn, starting with animal testing.**

18 **Can you explain the animal testing research during this period?**

19 A: Animal testing in the form of mouse skin painting was undertaken by Wynder and
20 Graham, as they turned their attention to the question of the “biological plausibility” of
21 their epidemiological findings. In conducting animal investigations, Wynder reasoned
22 that if tumors could be produced in animal models, it would be an important step in
23 confirming the early epidemiologic findings.

1 **Q: Can you explain Wynder's research?**

2 A: I can. Noting that smoke condensates, also known as tars, contained benzpyrenes,
3 arsenic and other known carcinogens, he painted the backs of mice to evaluate their
4 effects. 58% of the mice developed cancerous tumors. Wynder concluded that "the
5 suspected human carcinogen has thus been proven to be a carcinogen for a laboratory
6 animal." These findings were reported in *Cancer Research* in December 1953, as
7 reproduced in U.S. Exhibit 58,868.

8 **Q: What is pathological research?**

9 A: Pathology is the area of medical science that centers attention on abnormalities in
10 anatomy and/ or cells and the specific changes attributed to disease. Usually this research
11 requires microscopic examination of specimens and the comparison of normal and
12 abnormal tissues. Research on the pathology of lung cancer centered on the examination
13 of tissue specimens from lung cancer patients.

14 **Q: Can you explain the pathological research that examined the connection**
15 **between smoking and disease during the period between 1954 and 1964?**

16 A: Yes, I can. During this period, surgeons and pathologists published clinical
17 reports associating cancer in their patients with their smoking habits. In 1957, Oscar
18 Auerbach and colleagues first reported in the *New England Journal of Medicine* on
19 "Changes in the Bronchial Epithelium in Relation to Smoking and Cancer of the Lung."
20 Auerbach's study evaluated patients who died and were autopsied with confirmed
21 smoking histories. Microscopists were kept ignorant of the smoking histories in the
22 30,000 examinations that they made to assure against potential bias. Auerbach and his
23 colleagues concluded in the *New England Journal of Medicine* in an article marked as

1 U.S. Exhibit 54,185:

2 These findings are fully consistent with the hypothesis that inhalants of one sort
3 or another are important factors in the causation of bronchogenic carcinoma.

4 The findings are also fully consistent with the theory that cigarette smoking is an
5 important factor in the causation of bronchogenic carcinoma.

6 Auerbach presented additional confirmatory findings in 1961 and 1979, including the
7 1979 *New England Journal of Medicine* article marked as U.S. Exhibit 63,538.

8 Such studies underscored and strengthened the epidemiological findings. For this
9 reason, to say that the evidence demonstrating a causal relationship between smoking and
10 lung cancer was based exclusively on statistical data – as the tobacco industry would
11 claim – was to fundamentally misrepresent the emerging scientific knowledge.

12 **Q: Would the tobacco industry's claim that the evidence demonstrating a causal**
13 **relationship between smoking and lung cancer was based exclusively on statistical**
14 **data have been accurate in the absence of the animal testing and pathological**
15 **experiments?**

16 A: No. Epidemiology is the study of disease – its incidence and determinants – in
17 populations. It is necessarily a multidisciplinary field that utilizes many complementary
18 approaches to the understanding of disease and its causes. Although, of course,
19 epidemiologists utilize statistical techniques in their researches, it would be incorrect to
20 say that epidemiological research is “merely statistical.” Epidemiologists are generally
21 seeking explanations for patterns of disease. As a result, they collect a wide range of
22 quantitative, biological, and pathological data. Their assessments are based on the
23 consistency of a wide range of data across medical and scientific areas of knowledge and

1 specialization. This was certainly true of the epidemiological investigations of lung
2 cancer and other diseases associated with tobacco use in the 1950s. The question pursued
3 by researchers was not only, is smoking statistically associated with lung cancer and
4 other diseases? Rather, they asked, was smoking consistent with what was known about
5 the biochemistry of tobacco, biology of exposure, the pathology of cancer, and other
6 available (or obtainable) data? They also scrupulously considered, what was the nature
7 and merit of alternative explanations? Were there alternative explanations for the
8 significant rise of lung cancer for which there was important supporting data?

9 **Q: You also mentioned “a considerable expansion of the epidemiological**
10 **evidence confirming the health effects of smoking” in the 1954-1964 time period.**
11 **What were you referring to?**

12 A: Following the early studies by Wynder and Graham, Doll and Hill and others, a
13 number of important attempts to replicate and assess their findings were undertaken in
14 the U.S. and abroad. Impressively, study after study confirmed and built upon these
15 findings.

16 **Q: Can you identify what you consider to be the most significant of these studies**
17 **for the Court?**

18 A: Yes, I can. Notably, E. Cuyler Hammond and Daniel Horn conducted a massive
19 epidemiological study of smoking and lung cancer under the auspices of the American
20 Cancer Society. In the Hammond and Horn study more than 200,000 men were followed
21 prospectively for nearly four years; during this period 12,000 died. They found that not
22 only was lung cancer far more prevalent among those who smoked as a cause of death
23 (24 times more than non-smokers), so too was heart disease and circulatory disease.

1 Hammond and Horn estimated that among smokers, smoking might account for up to 40
2 percent of their mortality.

3 **Q: When did Hammond and Horn publicize their results?**

4 A: Findings from their studies began to appear in the medical literature and in the
5 public media in 1954. The final results were reported in the *Journal of the American*
6 *Medical Association (JAMA)* in 1958.

7 **Q: Dr. Brandt, do you recognize U.S. Exhibit 63,609?**

8 A: I do. This is a copy of the *JAMA* article by Hammond and Horn where they
9 reported the final results of their epidemiological study.

10 **Q: As a medical historian, do you have an opinion as to whether there was a**
11 **mainstream scientific consensus that smoking was a cause of lung cancer during the**
12 **1950s?**

13 A: Yes. During the course of the 1950s the evidence implicating cigarette smoking
14 as a cause of lung cancer became overwhelming. As a result, there was substantial
15 scientific and medical consensus concerning this finding. The research that appeared in
16 the most elite, peer-reviewed journals all reached the same conclusion: that cigarette
17 smoking was a serious health hazard that caused lung cancer and death. Especially
18 impressive was the fact that many studies from a variety of methodological approaches
19 all reached this same conclusion. Moreover, the findings were supported by
20 investigations of cigarette tars and animals, as well as pathological observations of
21 human tissues exposed to cigarette smoke.

22 **Q: What is your opinion based on?**

23 A: Beyond the quality of the investigation already discussed, there are a number of

1 indications that a powerful consensus had emerged among physicians and scientists. My
2 opinion is based upon an extensive review of the peer-reviewed medical and scientific
3 research on tobacco and lung cancer published during this period. More importantly,
4 comprehensive reviews conducted by independent researchers at the time all reached the
5 same conclusions. And during the 1950s, not a single substantial study came out which
6 contradicted these findings.

7 Astute observers of clinical medicine frequently pointed to the persuasiveness and
8 authority of these conclusions. Assessing the evidence in September 1953 – three months
9 prior to the Plaza Hotel meetings – Joseph Garland, editor of the *New England Journal of*
10 *Medicine*, noted that the most recent Doll and Hill publication “yielded evidence of an
11 association between cigarette smoking and lung cancer so strong as to be considered
12 proof within the everyday meaning of the word.” Garland continued, “If similar data had
13 incriminated a food contaminant that was not habit forming and was not supported by the
14 advertising of a financial empire, there is little doubt that effective counter measures
15 would have followed quickly.”

16 “The situation,” concluded Garland, “affords unusual opportunities for the vast
17 tobacco interests to support impartial researches into the effects that their products may
18 have on human health.”

19 In 1956, Charles Cameron, Medical Director of the American Cancer Society,
20 offered a similar perspective. Cameron, who had initially been skeptical about the link
21 between smoking and disease, now joined the growing medical consensus, indicating:
22 “There is in some quarters an unbecoming skepticism of statistics in general and of these
23 remarkably consistent results in particular. By some – a diminishing band, as I see it –

1 the findings are rejected because there is not 'laboratory proof.' We must remember that
2 far less efficient statistical methods have pointed to direct and effective means of
3 preventing illness many times in the past."

4 Cameron pointed out the limitations in seeking "experimental proof": "What is
5 the nature of the proof which is demanded to establish the cancer-causing effect of
6 cigarette smoking? If it is that smoke or another tobacco product must be shown to cause
7 cancer of the lung under conditions of experimental control using living human subjects,
8 then I hope the experiment will never be undertaken. No standards of proof in the entire
9 world of research demand as much as that."

10 Cameron explained: "If the degree of association which has been established
11 between cancer of the lung and smoking were shown to exist between cancer of the lung,
12 and say, eating spinach, no one would raise a hand against the proscription of spinach
13 from the national diet."

14 These leading figures in medical science now argued that the evidence was clear,
15 convincing and scientifically persuasive and that physicians and public health officials
16 had a responsibility to warn their patients and the public. They reasoned that medical
17 knowledge incorporates social responsibility. The findings about lung cancer and
18 smoking, according to these observers, had reached a level of significance and certainty
19 that now triggered these professional responsibilities.

20 One additional indicator of medical consensus was the very fact that many
21 physicians who closely followed the emerging evidence began the process of quitting
22 smoking. Throughout this period, as researchers came to know the data, they reported
23 quitting smoking. John Hill, too, had quit smoking in the 1940s.

1 **Q: When was consensus reached?**

2 A: There is, of course, no single moment at which one can identify the emergence of
3 a scientific and medical consensus. For this reason, historians weigh a range of diverse
4 data and evidence to assess the emergence of consensus and the authority and legitimacy
5 of new knowledge. In the case of cigarette smoking there was, by the mid-1950s a
6 wealth of findings, rigorously replicated and validated across the domains of clinical,
7 population, and laboratory investigation.

8 Physicians, scientists and public health officials critically evaluated and
9 confirmed these findings. Additionally, researchers responded directly to criticism or
10 skepticism of their initial studies by designing and implementing new research studies.

11 Another approach to evaluating scientific consensus would be to examine the
12 series of consensus reports issued by voluntary health agencies and the Public Health
13 Service in the 1950s.

14 **Q: Can you explain what a consensus report is, as you refer to it here?**

15 A: Yes. Because the tobacco industry continued to denigrate and vigorously attack
16 this data, there remained considerable medical and public confusion concerning what was
17 known, and with what degree of confidence. As a result, a number of public and private
18 agencies took steps to make comprehensive and objective evaluations of the research
19 findings. In every instance (except for assessments offered by the industry itself) such
20 consensus committees reached the same conclusions: the evidence was clear and
21 powerful.

22 **Q: Do these consensus reports support your conclusions about the existence of a**
23 **scientific consensus in the 1950s?**

1 A: Yes, they do.

2 **Q: What consensus reports do you specifically rely on to support your**
3 **conclusion about the existence of a scientific consensus in the 1950s?**

4 A: One is the report from a group organized at the urging of Surgeon General Leroy
5 Burney. Specifically, in 1956, at the urging of Burney, a study group on smoking and
6 health was organized by the American Cancer Society, the American Heart Association,
7 the National Cancer Institute, and the National Heart Institute. This group of
8 distinguished experts met regularly to assess the character of the scientific evidence
9 relating to tobacco and health. At that time the group noted that sixteen studies had been
10 conducted in five countries all showing a statistical association between smoking and
11 lung cancer. Among the studies they summarized it was demonstrated that: lung cancer
12 occurs 5-15 times more frequently among smokers than non-smokers; on a lifetime basis
13 one of every ten men who smoke more than two packs a day will die of lung cancer; and
14 cessation reduces the probability of developing lung cancer.

15 They also noted that the epidemiological findings were supported by animal
16 studies in which malignant neoplasms had been produced by tobacco smoke condensates.
17 Further, human pathological and histological studies added evidence to strengthen the
18 “concept of causal relationship.” The authors concluded:

19 Thus, every morphologic stage of carcinogenesis, as it is understood at present,
20 has been observed and related to the smoking habit.

21 The sum total of scientific evidence establishes beyond reasonable doubt that
22 cigarette smoking is a causative factor in the rapidly increasing incidence of
23 human epidermoid carcinoma of the lung. The evidence of a cause-effect

1 relationship is adequate for considering the initiation of public health measures.
2 The group also recognized the value of continued investigation, noting that “additional
3 research is needed to clarify many details and to aid in the most effective development of
4 a program of lung cancer control.”

5 **Q: Were the conclusions you have cited published?**

6 A: Yes, they were published in the journal *Science* in 1957. U.S. Exhibit 63,610 is a
7 copy of the journal as published in 1957.

8 **Q: Was the recognition of a need for additional research inconsistent with the**
9 **group’s conclusion that “the sum total of scientific evidence establishes beyond a**
10 **reasonable doubt that cigarette smoking is a causative factor in the rapidly**
11 **increasing incidence of human epidermoid carcinoma of the lung”?**

12 A: No, it was not inconsistent. The researchers who had demonstrated the causal
13 relationship between cigarette use and lung cancer understood that there was, of course,
14 more to know about the relationship of cigarette smoking to cancer and other diseases.
15 All scientific knowledge, they reasoned, is limited and provisional. In fact, among those
16 who had done the pathbreaking work demonstrating that cigarettes cause disease, there
17 was no question that there was more to know. Nonetheless, they reasoned that what was
18 *known* – known scientifically – should be utilized for the benefit of public health in a
19 timely way. As A. Bradford Hill explained later, in 1965:

20 All scientific work is liable to be upset or modified by advancing knowledge. That
21 does not confer upon us a freedom to ignore the knowledge we already have, or to
22 postpone the action that it appears to demand at a given time.

23 **Q: You mentioned the review organized by the American Cancer Society, the**

1 **American Heart Association, the National Cancer Institute, and the National Heart**
2 **Institute in 1956. Were other assessments of the body of scientific evidence showing**
3 **smoking to be a cause of disease undertaken in the 1950s?**

4 A: Yes. In January 1959, another distinguished group of cancer researchers offered a
5 substantive review of the available evidence linking cigarettes to lung cancer. The group
6 was comprised of Jerome Cornfield, who was Assistant Chief, Biometrics Section,
7 National Cancer Institute and Chairman, Department of Biostatistics at Johns Hopkins;
8 William Haenszel of the Biometry Branch at the National Cancer Institute; E. Cuyler
9 Hammond, Director of the Statistical Research Center Division of the American Cancer
10 Society; Abraham M. Lilienfeld, Head of the Department of Chronic Diseases at Johns
11 Hopkins; Michael Shimkin, Head of the Biometry and Epidemiology Branch at the NCI;
12 and Ernst L. Wynder of Sloan-Kettering. This group carefully considered the range of
13 alternative hypotheses to account for the significant rise in cases of, and deaths from,
14 lung cancer. They concluded:

15 The magnitude of the excess lung-cancer risk among cigarette smokers is so great
16 that the results can not be interpreted as arising from an indirect association of
17 cigarette smoking with some other agent or characteristic, since this hypothetical
18 agent would have to be at least as strongly associated with lung cancer as cigarette
19 use; no such agent has been found or suggested. The consistency of all the
20 epidemiologic and experimental evidence also supports the conclusion of a causal
21 relationship with cigarette smoking, while there are serious inconsistencies in
22 reconciling the evidence with other hypotheses which have been advanced.

23 Unquestionably there are areas where more research is necessary, and, of course,

1 no single cause accounts for all lung cancer. The information already available,
2 however, is sufficient for planning and activating public health measures.
3 This paper, a copy of which is marked as U.S. Exhibit 63,607, also explicitly refuted
4 ongoing critiques by statisticians R. A. Fisher and J. Berkson, often trumpeted by the
5 industry.

6 Cornfield and his colleagues noted that investigations of the health implications of
7 smoking had significantly accelerated following the epidemiological studies earlier in the
8 decade. Not only did the new prospective studies conducted in diverse populations
9 confirm and strengthen the earlier findings, so too did pathological and toxicologic
10 analyses.

11 **Q: You mentioned critiques by statisticians Fisher and Berkson. Can you**
12 **describe those critiques?**

13 A: Berkson, a physician and head of the Mayo clinic statistics unit, continually raised
14 questions about possible bias in the selection of individuals in the respective
15 epidemiological investigations. According to Berkson, the fact that a number of these
16 studies had been conducted among hospitalized patients and utilized volunteers could
17 result in bias and confounding. This critique was repeatedly addressed and responded to
18 by the epidemiologic researchers. In addition, Berkson was especially skeptical about the
19 findings since cigarette smoking seemed not only to result in more cases of lung cancer
20 but in higher mortality from multiple causes. When such investigation “turns out to
21 indicate that smoking causes or provokes a whole gamut of diseases, inevitably it raises
22 the suspicion that something is amiss.” But, of course, smoking did come to be linked to
23 a wide range of different diseases. In this instance, Berkson’s *a priori* commitment to

1 specificity (one cause, one disease) led him to dismiss findings of impressive
2 significance. Despite new findings specifically addressing his critiques, Berkson
3 remained unrelenting in his skepticism.

4 Fisher's critiques were based upon related concerns. The inability (based on
5 obvious ethical objections) to conduct a randomized experiment, led him to question the
6 results of the epidemiological studies. Additionally, he was deeply committed to
7 constitutional or genetic notions of cancer causality. Fisher speculated that perhaps it
8 was some constitutional factor that led individuals both to be smokers and to get lung
9 cancer, even though smoking and lung cancer might not be causally related. Researchers
10 such as Doll and Hill repeatedly rebutted this theory, returning to the critical question of
11 how to account for the rise in lung cancers during the course of the 20th century, if the
12 disease was simply "constitutional."

13 **Q: Were the critiques of Fisher and Berkson considered to be legitimate at the**
14 **time they were made?**

15 A: Both Fisher and Berkson raised important questions, but their persistent critiques
16 fell flat in the face of overwhelming evidence and the accumulation of studies replicating
17 the findings. In the Cornfield paper marked as U.S. Exhibit 63,607, Cornfield and his
18 colleagues observed:

19 We see nothing inherently contradictory or inconsistent in the suggestion that one
20 agent can be responsible for more than one disease, nor are we lacking in
21 precedents. The Great Fog of London in 1952 increased the death rate for a
22 number of causes, particularly respiratory and coronary disease, but no one has
23 given this as a reason for doubting the causal role of the Fog. Tobacco smoke,

1 too, is a complex substance and consists of many different combustion products.
2 It would be more 'incredible' to find that these hundreds of chemical products all
3 had the same effect than to find the contrary. A universe in which cause and
4 effect always have a one-to-one correspondence with each other would be easier
5 to understand, but it obviously is not the kind we inhabit.

6 Nonetheless, the industry broadcast and rebroadcast these critiques. And ultimately, both
7 Fisher and Berkson went to work for the industry as paid consultants.

8 **Q: Did Cornfield and his colleagues reach any additional conclusions in their**
9 **review that you find significant to your opinions as an expert witness?**

10 A: They did. Importantly, Cornfield and colleagues noted that the persistent
11 "debate" about the scientific findings regarding cigarette smoking was driven by the
12 industry, indicating:

13 It would be desirable to have a set of findings on the subject of smoking and lung
14 cancer so clear-cut and unequivocal that they were self-interpreting. The findings
15 now available on tobacco, as in most other fields of science, particularly biologic
16 science, do not meet this ideal. Nevertheless, if the findings had been made on a
17 new agent, to which hundreds of millions of adults were not already addicted, and
18 on one which did not support a large industry, skilled in the arts of mass
19 persuasion, the evidence for the hazardous nature of the agent would generally be
20 regarded as beyond dispute.

21 Cornfield suggested that the very idea of a "controversy" had been manufactured by the
22 TIRC and other industry public relations efforts.

23 **Q: We have now discussed the consensus reports contained in U.S. Exhibits**

1 **63,610 and 63,607. What other consensus reports, published in the same time**
2 **period, that are important to your opinions?**

3 A: Yes. By this time the Medical Research Council of Great Britain, as well as
4 public health officials in the Netherlands, Norway, and the U.S. had all accepted the
5 conclusion that cigarette smoking caused lung cancer. In 1957, the Medical Research
6 Council issued a statement, printed in the *British Medical Journal* and the *Lancet* and
7 marked as U.S. Exhibit 63,537, concluding: "Evidence from many investigations in
8 different countries indicates that a major part of the increase [in lung cancer] is associated
9 with tobacco smoking, particularly in the form of cigarettes. In the opinion of the
10 Council, the most reasonable interpretation of this evidence is that the relationship is one
11 of direct cause and effect. The identification of several carcinogenic substances in
12 tobacco smoke provides a rational basis for such a causal relationship."

13 In November 1959, US Surgeon General Leroy E. Burney offered his own
14 evaluation of the scientific evidence linking cigarettes to lung cancer. Burney revisited
15 the epidemiologic data, as well as other confirmatory animal and pathological
16 investigations. After a thorough assessment of current data, Burney came to the
17 following conclusions in *JAMA*, as marked as U.S. Exhibit 21,022:

18 There can be no doubt that a significant portion of the increase in lung cancer is
19 real. This rise has not been caused solely by improvements in diagnostic
20 techniques, better reporting on death certificates, or an increase of older persons
21 in the population. If we accept as valid the sequence of pathological changes
22 given above the prevention of lung cancer, to a large extent, becomes possible.

23 This will be accomplished if carcinogenic substances from any source can be kept

1 out of the air inhaled into the lungs.

2 For Burney, this fact meant that there were important and timely opportunities to prevent
3 disease:

4 The Public Health Service believes that the following statements are justified by
5 studies to date:

- 6 1. The weight of evidence at present implicates smoking as the principal
7 etiological factor in the increased incidence of lung cancer.
- 8 2. Cigarette smoking particularly is associated with an increased chance of
9 developing lung cancer.
- 10 3. Stopping cigarette smoking even after long exposure is beneficial.
- 11 4. No method of treating tobacco or filtering the smoke has been demonstrated to
12 be effective in materially reducing or eliminating the hazard of lung cancer.
- 13 5. The nonsmoker has a lower incidence of lung cancer than the smoker in all
14 controlled studies, whether analyzed in terms of rural areas, urban regions,
15 industrial occupations, or sex.
- 16 6. Persons who have never smoked at all (cigarettes, cigars, or pipe) have the
17 best chance of escaping lung cancer.
- 18 7. Unless the use of tobacco can be made safe, the individual person's risk of
19 lung cancer can best be reduced by elimination of smoking.

20 As Burney's analysis had indicated, by 1959 the evidence of the harms of cigarette
21 smoking was nothing short of overwhelming.

22 In 1960, the World Health Organization also issued a statement signaling its own
23 confirmations of the US Surgeon General's and the Medical Research Council's

1 conclusions, after conducting their own review of the scientific findings.

2 In 1962, yet another thorough and far-reaching assessment of the scientific
3 evidence reached these same conclusions. The British Royal College of Physicians, after
4 two years of investigation, stated in a report marked as U.S. Exhibit 21,023 that:

5 “Diseases associated with smoking now cause so many deaths that they present one of the
6 most challenging opportunities for preventive medicine today.” The report concluded:

7 The strong statistical association between smoking, especially of cigarettes, and
8 lung cancer is most simply explained on a causal basis. . . . The conclusion that
9 smoking is an important cause of lung cancer implies that if the habit ceased, the
10 death rate from lung cancer would eventually fall to a fraction, perhaps to one
11 fifth or even, among men, to one tenth of the present level. Since the present
12 annual number of deaths attributed to lung cancer before the age of retirement is
13 some 12,000 . . . a large amount of premature shortening of life is at issue.

14 As this statement makes clear, lives were at stake in the assessment of this scientific
15 evidence linking cigarettes to disease. Over and over again, independent critical
16 evaluation of the scientific findings that cigarettes caused lung cancer reached the same
17 conclusion.

18 **Q: For your work as a medical historian, what is the value of assessments of the**
19 **scientific consensus like those you have described?**

20 A: The value arises in large part because of the fact that the TIRC, under the
21 direction of the industry with the assistance of Hill and Knowlton, was actually quite
22 effective in assuring that the industry position of “no proof” and the need for “more
23 research” reached the national media. Typically news accounts of new medical findings

1 would be accompanied by a statement from TIRC insisting that “nothing new” had been
2 found and that the studies were “merely” statistical. As a result, and perhaps to a degree
3 unprecedented in the history of medicine, thorough and objective statements reviewing
4 the findings came to be of greater significance. Indeed, the series of consensus
5 statements on the part of major medical and public health groups had never before
6 occurred in the face of a scientific “controversy.” The TIRC had been very effective in
7 mobilizing a relatively small group of skeptics and amplifying their views as if they were
8 equal in number and significance to the scientific consensus about the harms of smoking.
9 But these skeptics and the industry that broadcast their views produced no new research
10 challenging the overwhelming evidence that smoking constituted a serious risk to health.

11 Because of the unprecedented resources brought to bear by the industry in shaping
12 this controversy, it became critical that groups of independent scientists be brought
13 together to offer their systematic assessment of the evidence.

14 **Q: Dr. Brandt, you indicated that Cornfield and his colleagues suggested that**
15 **the very idea of a “controversy” had been manufactured by the TIRC and other**
16 **industry public relations efforts. Do you agree with Cornfield’s suggestion?**

17 A: I do agree with Cornfield’s conclusion that the controversy was spurred on by the
18 industry in their own interest. This conclusion, by the way, is not just my *post hoc*
19 assessment; Cornfield’s views were shared by other important contemporary observers,
20 such as Alton Ochsner and Evarts Graham.

21 While there is no question that there was genuine skepticism among some
22 scientists about the findings, this skepticism was sustained and amplified by the tobacco
23 industry through the work of Hill and Knowlton and TIRC. The persistence of a small

1 group of skeptics is not an indication of a lack of consensus.

2 **Q: How do you, as a historian of science, analyze skepticism in the face of new**
3 **scientific findings?**

4 A: Generally, historians of science and medicine would not simply identify those
5 who come to accept a particular finding, on the one hand, and those who are skeptical on
6 the other. We are typically interested in identifying the particular context, or, one might
7 say “location,” of the various positions that historical actors (in this case physicians and
8 scientists) might take on a particular question. In the instance of assessing the
9 relationship of smoking and lung cancer, it is important to consider that skepticism may
10 be attributed to outside influences, or what today we call conflicts of interest. In the case
11 of the smoking lung cancer controversy, such conflicts of interest played a particularly
12 important role in the following way. The industry, through the TIRC and its public
13 relations strategy, was especially effective in identifying and supporting skeptics.
14 Skeptics were invited to join the Scientific Advisory Board of the TIRC; they and their
15 home institutions were provided with research grants from the TIRC. Their views were
16 effectively solicited and broadcast widely by the TIRC and the TI. In this way, the
17 tobacco industry acted to create, sustain, and perpetuate the debates about the relationship
18 of smoking and health.

19 As a result, there remained a widespread perception of an active and highly
20 contested scientific controversy despite overwhelming evidence and impressive scientific
21 consensus that smoking caused serious disease.

22 **Q: In your opinion, was there a “real” controversy about smoking and health in**
23 **the 1950s?**

1 A: In my work on the history of tobacco, I have not approached the question in this
2 way. To simply ask if the controversy was "real" suggests a bimodal response: yes, it
3 was; no, it was not. The goal in my historical research has been to place the scientific
4 and medical research about smoking and disease into a full context and to "locate" the
5 various positions that physicians and scientists took as they individually and collectively
6 evaluated the evidence.

7 **Q: How have you approached the question in your work on the history of**
8 **tobacco?**

9 A: Rather than asserting that the controversy was real or not, I have evaluated the
10 range of interests that were engaged in the controversy. And I have asked what were the
11 causes of the controversy? What forces contributed to its resolution? And what forces
12 and interests contributed to its continuation? Historians who claim that the controversy
13 was "real" have often failed to fully examine the trajectory of research, evidence, and
14 skepticism over the course of the 1950s. Initially there were a number of important
15 skeptics, but even as early as 1953 many who had voiced skepticism had come to modify
16 their positions in the face of new and convincing scientific research. To suggest that
17 through the 1950s and 1960s that eminent scientists equally and independently lined up
18 on both sides of a "controversy" about the harms of smoking is to grossly misrepresent
19 the historical record.

20 During the decade the industry had developed explicit strategies to attempt to
21 maintain and foment controversy in the face of new research, increasingly overwhelming
22 evidence, and emerging scientific consensus. In my own work, I have centered attention
23 on the role of the tobacco industry in shaping the particular character and nature of this

1 controversy. And I have concluded that the industry had a major role in perpetuating the
2 notion of a controversy to serve their interests.

3 **Q: What do you base your own conclusion on?**

4 A: Focusing on the period from 1954-1964, I look to the public relations function of
5 the TIRC, the TIRC's response to consensus statements, and the discrepancy between the
6 industry's public message and internal company research. The TIRC was front and
7 center in the industry's response to the mounting scientific evidence. TIRC
8 representatives frequently issued statements during this period explaining: TIRC's
9 "purpose is solely to obtain new information and to advance human knowledge in every
10 possible phase of the tobacco and health relationship." Nonetheless, the TIRC program
11 conducted very little research that focused on the constituents of cigarette smoke and/or
12 the health of smokers. According to repeated claims of the TIRC, many independent and
13 responsible scientists continued to voice skepticism – and opposition – to the findings
14 that cigarette smoking causes serious disease. In reality, such views were increasingly
15 marginal and typically voiced by those with financial ties to the TIRC.

16 **Q: I want to take the public relations function of the TIRC, the TIRC's response**
17 **to consensus statements, and the discrepancy between the industry's public message**
18 **and internal company research one by one. Can you explain why you identify the**
19 **public relations function of the TIRC as a basis for your conclusion that the tobacco**
20 **industry had a major role in perpetuating the notion of a controversy?**

21 A: Anything but an independent research organization committed to exploring the
22 health effects of cigarette use, it instead proved to be a sophisticated public relations and
23 legal tool of the tobacco industry: It worked assiduously and consistently to attack and

1 deride the emerging scientific consensus regarding the harms of smoking; its research
2 program was generally irrelevant to the immediate questions of the harms of smoking;
3 and it acted as a clearinghouse for misinformation and misdirection in the scientific
4 debate.

5 Rather than conducting research to clarify the relationship of tobacco and health –
6 as it promised it would – the TIRC stood firmly committed from the outset to insisting on
7 a "controversy." Its principal commitment was to maintaining the notion of an "open
8 question" regarding smoking and health.

9 **Q: What do you rely on to reach the conclusion that the TIRC had a public**
10 **relations focus during the 1954-1964 time period?**

11 A: The history of the TIRC's activities, as shown by internal documents, public
12 statements and its various programs and activities, including the formation of the
13 Tobacco Institute as a separate public relations entity, support this conclusion. For
14 example, while the industry publicly voiced over and over the research focus of TIRC, in
15 fact internal documents show a recognition that TIRC was primarily a public relations
16 vehicle. In April 1955, for instance, W.T. Hoyt, Executive Secretary of the TIRC
17 explained the relationship of public relations and research in the TIRC's program in a
18 document that has been marked as U.S. Exhibit 33,006:

19 Essentially, the major purposes of the TIRC are Research and Public Relations.

20 Our job is to maintain a balance between the two, and to continue to build soundly
21 so that at all times Research and Public Relations complement each other. In that
22 way we intend to assume the mantle of leadership and, ultimately, to create a
23 condition where the public will look to the TIRC for answers rather than to others.

1 Just as significantly, representatives of Hill and Knowlton attended Scientific Advisory
2 Board meetings of the TIRC from 1954 to 1964.

3 Industry accounts of the “controversy” consistently set up straw-men and
4 misrepresented the evidence that smoking causes disease. Industry literature, for
5 example, frequently pointed to the fact that nonsmokers also get lung cancer. Therefore,
6 they argued, how could one attribute lung cancer to cigarette smoking? But none of the
7 researchers exploring the relationship of smoking to lung cancer purported to find such a
8 one-to-one relationship. And medical science had long accepted notions of cause which
9 assumed that not every exposure to a causal agent resulted in disease.

10 Although the TIRC persistently castigated the major studies incriminating
11 smoking as a cause of disease, they were far more sympathetic when an epidemiologic
12 study apparently showed no harm. In *Tobacco and Health*, a publication sent to doctors
13 and dentists, one copy of which is marked as U.S. Exhibit 72,185, the TIRC announced
14 that “Cigarette smoking is compatible with normal health, and even heavier-than-average
15 cigarette smoking is compatible with better-than-average mortality rates, according to a
16 scientific report presented before the Southern Medical Association.” The publication,
17 which appeared 3 times a year, also declared in 1958: “Continuing scientific research
18 lends support to the position that too many unknowns exist today concerning lung cancer
19 to warrant conclusions placing a major causative role on cigarette smoking, according to
20 the 1957 Report of the Scientific Director of the Tobacco Industry Research Committee.”
21 *Tobacco and Health*, with a circulation that ultimately exceeded 500,000, was utilized by
22 TIRC as a public relations vehicle to influence health professionals. Targeting health
23 professionals was particularly conducive to one of the major thrusts of the TIRC, which

1 was to emphasize that human cancers were complex processes, difficult to study, and
2 difficult to understand.

3 **Q: I'd like you to take a look at U.S. Exhibits 21,345, 21,264, 21,282, 22,459,**
4 **22,983, 21,299, 26,174, 62,851, 62,844, 62,845, 62,847, 62,849 through 62,851, 77,032,**
5 **77,059, 77,060, 77,068 through 77,071, 77,111, 77,112, 86,010, 86,011, 86,018 through**
6 **86,021, 86,044, 86,045, 86,048, 86,050, and 86,052. Can you describe these**
7 **documents?**

8 A: Yes, I can. These are additional issues of *Tobacco and Health* that were used by
9 the TIRC to target health professionals.

10 **Q: Dr. Brandt, have you studied the TIRC's scientific program?**

11 A: I have.

12 **Q: And in your opinion, notwithstanding what you've described as the TIRC's**
13 **emphasis "that human cancers were complex processes, difficult to study, and**
14 **difficult to understand," did the TIRC develop a scientific program with an**
15 **approach to the study of human cancers in order to address questions concerning**
16 **the harms caused by cigarette smoking?**

17 A: It did not. The TIRC never developed an approach to carcinogenesis and tobacco
18 that could resolve the question of the harms induced by cigarette smoking. Although
19 some researchers explored alternative hypotheses, the TIRC did not typically pursue
20 direct research on cigarettes and disease. Rather than addressing the constituents in
21 tobacco smoke and their demonstrated effect on the human body, the TIRC directed the
22 predominance of its resources to alternative theories of the origins of cancer centering on
23 genetic factors and environmental risks. Most research projects funded through its

1 Scientific Advisory Board were irrelevant to the immediate questions of the harms of
2 tobacco. At the same time, the TIRC used truisms such as the “need for more research,”
3 and “how much more there is to learn” to deflect attention away from what was known.

4 **Q: I’d like to come back to questions about research funded by the TIRC, but**
5 **first, are there other aspects of the TIRC that you rely on to support your**
6 **conclusions about TIRC’s devotion to public relations?**

7 A: There are. One thing to look at in particular is the industry’s selection of the first
8 Scientific Director. The first Scientific Director of TIRC, appointed in 1954, was
9 biologist C.C. Little, the former president of University of Maine, University of
10 Michigan, and the founder of the Roscoe B. Jackson Memorial Laboratory. Little’s
11 personal commitments and assumptions about cancer causality made him an ideal
12 proponent of the industry’s goal of maintaining a “controversy” rather than scientifically
13 resolving the questions regarding smoking and health. Little explained at the press
14 conference announcing his appointment that: “I am an ultraconservative about cause and
15 effect relationships.” Little had no compunction, however, about offering
16 unsubstantiated claims about the health benefits of cigarette use such as that found in
17 U.S. Exhibit 20,278: “It is very well-known, for example, that tobacco has relaxed a great
18 many people. It is a very good therapy for a great many nervous people.”

19 C.C. Little also argued that there were no known carcinogens in tobacco tars (this
20 despite clear industry documentation to the contrary). He repeatedly centered attention
21 on the so-called “constitutional hypothesis”; other environmental risks; and the need for
22 more research, stating in a document marked as U.S. Exhibit 20,686:

23 Too little is known about many factors, including why people smoke or what kind

1 of people become particularly heavy smokers. . . .

2 The problem of causation of any type of cancer is complex and difficult to

3 analyze. All research on this so-called constitutional disease is, and must be,

4 painstaking and time consuming. There is not known today any simple or quick

5 way to answer the question of whether any one factor has a role in causing human

6 lung cancer. . . .

7 Despite all the attention given to smoking as an accused factor in human lung

8 cancer, no one has established that cigarette smoke, or any one of its known

9 constituents, is cancer-causing to man.

10 Little tended to castigate as moralists those whose findings showed harms with tobacco

11 use, arguing in the same document:

12 The right of an individual to determine his own level or threshold of

13 convincibility is unquestioned. There are and will always be individuals who are

14 convinced without the need of experimental evidence that *all* tobacco in *any* form

15 is evil, noxious and toxic. There are individuals with a similar attitude toward

16 alcohol, coffee, and the use of drugs, sera or medicines. . . .

17 Such assumptions stimulated some investigators to begin an enthusiastic hunt for

18 *the* 'component' or 'components' in tobacco smoke that can be blamed for the

19 unproved cause-and-effect relationship as well as for the reported production of

20 skin cancer in some experiments with certain strains of laboratory mice.

21 The focus of the TIRC and Little on the need for more research would continue

22 throughout the 1950s and beyond.

23 The selection of Little as the TIRC Scientific Director also contributed to the

1 TIRC's focus due to Little's direction of the TIRC towards what he called "pioneer
2 research." He claimed that studies focused on cigarettes could "stifle or delay needed
3 research to find the basic origins of lung cancer or cardiovascular diseases, which are
4 most powerful, diversified and deadly enemies to our well-being." But this strategy
5 precluded any significant investigation into the toxic effects of cigarette use.

6 **Q: Dr. Brandt, I'd like to show you U.S. Exhibit 20,636. Have you seen this**
7 **document before?**

8 A: I have. This is a statement made by the TIRC in 1958 through its Chairman,
9 Timothy V. Hartnett, reasserting the public commitments it had made in the Frank
10 Statement: "At its formation in 1954, the Tobacco Research Committee stated its
11 fundamental position: 'We believe the products we make are not injurious to health. We
12 are pledging aid and assistance to the research effort into all phases of tobacco use and
13 health.' That statement and pledge are reaffirmed today by the members of the Tobacco
14 Industry Research Committee."

15 **Q: In your opinion, at the time this statement was made by Hartnett, had the**
16 **TIRC provided "aid and assistance to the research effort into all phases of tobacco**
17 **use and health"?**

18 A: For the reasons I have explained, no, it had not provided aid and assistance to the
19 research effort into tobacco use and health.

20 **Q: In your opinion, from the time this statement was made in 1958 going**
21 **forward, did the TIRC provide "aid and assistance to the research effort into all**
22 **phases of tobacco use and health"?**

23 A: No, it did not. In fact, at about this time, the tobacco industry sought to amplify

1 its public relations presence on smoking and health issues through the formation of the
2 Tobacco Institute, not only failing to aid research into questions of smoking and disease,
3 but also increasing the effort to simultaneously deny or distort legitimate science.

4 **Q: Can you explain why you believe the formation of the Tobacco Institute**
5 **constituted an effort to amplify the industry's public relations presence on smoking**
6 **and health issues?**

7 A: By mid-1956 the industry found itself in yet another public relations dilemma.
8 The utility of the TIRC was constituted in its stated commitment to "objective" science
9 and its search for the "truth." At the same time, industry executives voiced a repeated
10 desire for a more aggressive public relations campaign. The Scientific Advisory Board
11 had expressed its "strong opposition" to entering the fray, and Little found himself caught
12 between Hill and Knowlton and his scientific colleagues recruited to serve on the SAB.

13 The legitimacy and influence of the TIRC rested upon the perception of restraint.
14 As a result, Carl Thompson of Hill and Knowlton argued in one of the Hill papers,
15 marked as U.S. Exhibit 88,409, that "A flamboyant campaign against the anti-smoking
16 propagandists would unquestionably alienate much of the support of the moderates in
17 both scientific and lay publics." Therefore, he urged that TIRC stay the course.

18 The only way to protect the public relations "capital" invested in the TIRC was to
19 create a separate entity for more aggressive public relations and political lobbying. In
20 1958, the industry announced the creation of the Tobacco Institute. With regulatory
21 initiatives on the horizon, especially proposals to label cigarettes as hazardous, John Hill
22 had advised the creation of a trade association that would not have the limitations
23 associated with TIRC. Although the division of labor between TIRC and the TI was

1 never precise, it had become abundantly clear that the public relations value of TIRC
2 would be compromised by the aggressive lobbying and press management that would
3 characterize TI.

4 **Q: What is the importance, if any, of the relationship between the TIRC and TI**
5 **for your expert opinions?**

6 A: Both groups were organized and administered by Hill and Knowlton.
7 Concern had grown about TIRC making partisan arguments on behalf of the industry
8 while at the same time sponsoring research that the industry wanted to be perceived as
9 “objective.” So, in the words of TI counsel as reflected in U.S. Exhibit 21,773:
10 the creation of a separate organization for public information was hit upon as a
11 way of keeping Little inviolate and untainted in his ivory tower while giving a
12 new group a little more freedom of action in the public relations field. I
13 understand that the legal people were especially interested in this argument
14 because they thought of Dr. Little as a potential witness and were not anxious to
15 have him making public statements which could compromise his usefulness to
16 them in court.

17 The relationship between the two organizations, therefore, and the objectives disclosed
18 by industry documents, makes their relationship important to the formation of my
19 opinions.

20 **Q: Let me ask you to turn back to the TIRC and, in particular, the TIRC’s**
21 **response to consensus statements. Can you explain why you identify TIRC’s**
22 **response to consensus statements as a basis for your agreement with Cornfield’s**
23 **suggestion that the very idea of a “controversy” had been manufactured by the**

1 **TIRC and other industry public relations efforts?**

2 A: Yes, I can. The TIRC's direct responses to the public statements emerging from
3 groups of scientists and policy-makers were consistent with TIRC's general message, as
4 well as that of TI. Little issued the following statement upon the publication of Burney's
5 1959 evaluation:

6 Despite the recent research trends, the conclusions set forth in the Public Health
7 Service review rely almost entirely on past reports that are no more conclusive
8 today than when these reports were first published. Most of the points are not
9 new but are familiar to the American public because they were first advanced
10 some years ago in statistical studies that admittedly are not supported by
11 experimental evidence.

12 **Q: Dr. Brandt, please review U.S. Exhibit 22,981. Have you seen this document**
13 **before?**

14 A: I have.

15 **Q: What is this document?**

16 A: This document is a copy of the statement issued by Dr. Little following
17 publication of the 1959 evaluation from Leroy Burney, as I have just described.

18 **Q: In your opinion, was there any basis for Little's assertion?**

19 A: There was not. It misstates the substance of Burney's evaluation, particularly
20 ignoring the fact that Burney had carefully evaluated the science of recent investigators,
21 and did not limit his assessment to epidemiological studies. At the time Little issued this
22 statement, there was critical evidence to confirm the hypothesis that smoking causes
23 disease drawn from clinical, population, and laboratory investigations. Burney had

1 carefully and critically addressed the arguments that Little and the TIRC had used to
2 denigrate the evidence. Moreover – contrary to Little’s assertion – Burney’s report made
3 explicit that the evidence implicating cigarettes as a cause of disease had come not only
4 from sophisticated and repeated epidemiological studies, but from intensive clinical and
5 laboratory investigations as well.

6 **Q: Do you rely on any other responses by the TIRC to consensus statements?**

7 A: I do. Little continued to insist that the TIRC program offered substantial new
8 insights into the problem of carcinogenesis, arguing in a document marked as U.S.
9 Exhibit 86,018, "Literally hundreds of studies have demonstrated the possible relation of
10 multiple factors in the complex chain that may result in lung cancer." In a letter marked
11 as U.S. Exhibit 63,530 to Stanhope Bayne-Jones, a member of the Surgeon General’s
12 Advisory Committee, Little criticized the 1962 Royal College Report, referring to the
13 “weaknesses inherent” in this type of report. He contended that it

14 advances no new evidence, presents no new or more penetrating form of analysis,
15 and therefore ends up being purely a statement of the individual opinions of the
16 small group of its composers.

17 This was, of course, offered in response to an extensive and careful review of previous
18 scientific findings by eminent scientists in Great Britain. Nonetheless, the TIRC offered
19 no evidence whatsoever to question the findings that cigarettes caused lung cancer and
20 other diseases. And although the industry had explicitly promised to work with public
21 health officials in the “Frank Statement,” to the contrary, it sought to undermine the
22 findings of Burney, the Public Health Service, and voluntary health agencies.

23 **Q: Dr. Brandt, please review U.S. Exhibit 21,177. What is this document?**

1 A: This is one of the documents I have relied on when evaluating the tobacco
2 industry's response to consensus statements. It was prepared by Hill and Knowlton in
3 1959 and states:

4 Comment from TIRC for the press remains an effective way to meet anti-tobacco
5 publicity efforts and emphasizes the multiple factors that should be considered.

6 This, of course, is complemented with a continuing program of supplying
7 information to give editors and writers a balanced perspective on questions of
8 tobacco and health.

9 Published in the November 28 issue of the *Journal of the American Medical*
10 *Association*, the article signed by the Surgeon General presented a selection of
11 published data about smoking as related to lung cancer. Anticipating the
12 appearance of the Burney article and learning of its contents in advance of
13 publication, it was possible to provide the press promptly with statements from
14 Dr. C.C. Little, Mr. James P. Richards, president of The Tobacco Institute, and
15 others. Press stories used the tobacco industry comment in covering the Surgeon
16 General's article.

17 The industry's response to such carefully prepared consensus statements was to be
18 prepared to attack them from a public relations perspective. The Tobacco Institute
19 released a statement from James Richards, its president, on the day of the publication of
20 the Burney Statement in 1959. In the statement, marked as U.S. Exhibit 22,720, Richards
21 accused Burney of "largely ignoring the balanced evidence reviewed in his own scientific
22 paper and summarizing his opinions with so little regard for that evidence During
23 the months we have been hearing about this new study of old findings by the Surgeon

1 General's office, we had hoped that repeated assurances of fair play would be borne out.
2 It is obvious they have not."

3 Hill and Knowlton's expert staff would then assure that Richards' statement
4 received full coverage in the press, creating the notion that scientific controversy
5 persisted. They vigorously pursued this public relations strategy, even as a great majority
6 of physicians and scientists had come to accept the scientific findings produced during
7 the decade.

8 **Q: Let's now turn to the discrepancy between public message and internal**
9 **company research. Can you explain why you identified the discrepancy as a basis**
10 **for your opinion that the very idea of a "controversy" had been promoted and**
11 **sustained by the TIRC and other industry public relations efforts?**

12 A: As I've explained, historical evidence demonstrates that the TIRC never wavered
13 from its essential mission of attempting to maintain "controversy" and an "open question"
14 while avoiding research centered on the potential impact of smoking on health.
15 Nonetheless, industry researchers did not accept this approach.

16 **Q: Are there specific documents that you've identified in support of your**
17 **opinion?**

18 A: There are. In the document marked as U.S. Exhibit 21,369, drafted in 1958, for
19 instance, visiting scientists (from British American Tobacco, Imperial Tobacco and
20 Carreras) representing the Tobacco Manufacturers Standing Committee offered their
21 impressions of their American colleagues. During their visit to the United States,
22 Bentley, Felton and Reid met with research directors of major tobacco companies, the
23 Scientific Advisory Board of the TIRC, its Industry Technical Committee, as well as

1 other experts in tobacco and disease in the academy and government. They noted that
2 there was virtual consensus among researchers within the industry that cigarettes played a
3 role in the production of human cancers.

4 With one exception (H.S.N. Greene) the individuals whom we met believed that
5 smoking causes lung cancer if by 'causation' we mean any chain of events which
6 leads finally to lung cancer and which involves smoking as an indispensable link.
7 In the U.S.A. only Berkson, apparently, is now prepared to doubt the statistical
8 evidence and his reasoning is nowhere thought to be sound. . . .

9 In their opinion T.I.R.C. has done little if anything constructive, the constantly re-
10 iterated 'not proven' statements in the face of mounting contrary evidence has
11 thoroughly discredited T.I.R.C., and the S.A.B. of T.I.R.C. is supporting almost
12 without exception projects which are not related directly to smoking and lung
13 cancer. Liggetts [sic] felt that the problem was sufficiently serious to justify
14 large-scale investment by the Company directly in experimental research on
15 smoke and cancer, accepting privately that a strong case against tobacco had been
16 made out and avoiding any public comment until their own research had provided
17 something concrete to offer. . . .

18 The majority of individuals whom we met accepted that beyond all reasonable
19 doubt cigarette smoke most probably acts as a direct though very weak carcinogen
20 on the human lung. The opinion was given that in view of its chemical
21 composition it would indeed be surprising if cigarette smoke were not
22 carcinogenic. This undoubtedly represents the majority but by no means the
23 unanimous opinion of scientists in U.S.A. These individuals advised us that

1 although it is not possible to predict unambiguously the effect of any substance on
2 man from its effect on experimental animals the generally successful use of
3 animals in other fields as a model for man fully justifies their use in our problem.

4 **Q: Why do you find this document significant for the historical question of the**
5 **source of the idea of a controversy over the health effects of cigarette smoking?**

6 A: This document is important because it reflects the candid assessment of industry
7 officials and scientists. In this instance, we have industry scientists confirming the idea
8 that there was in fact broad consensus about tobacco as a carcinogen even among
9 industry researchers, a fact the industry repeatedly denied publicly through its public
10 relations operations. Further, the document indicates how marginal individual skeptics
11 like Berkson and Greene had become by 1958. Finally, the document makes explicit that
12 industry scientists had come to accept that smoking constituted a health risk, in spite of
13 their public denials.

14 **Q: What other documents have you identified in support of your opinion that**
15 **the discrepancy between the industry's public message and internal company**
16 **research demonstrates that the controversy over the health effects of cigarette**
17 **smoking was perpetuated by the TIRC and other industry public relations efforts?**

18 A: U.S. Exhibit 63,583 details the work of industry researchers to document potential
19 carcinogenic agents found in cigarette smoke. In 1962, R. J. Reynolds chemist Alan
20 Rodgman offered his own assessment of "the smoking and health problem." According
21 to Rodgman:

22 Although the major part of the sales of this company consists of cigarettes, what
23 the Company sells is cigarette smoke. This company, therefore, should be

1 concerned with the physiological properties and composition of cigarette smoke.
2 The benefits from such knowledge are obvious, particularly if it anticipates
3 possible governmental regulation. During the past two decades, cigarette smoke
4 has been the target of a host of studies relating it to ill-health and particularly to
5 lung cancer. The majority of these studies incriminate cigarette smoke from a
6 health viewpoint. . . .

7 Epidemiological data: The results of 34 different statistical studies show that
8 cigarette smoking increases the risk of developing lung cancer. Many authorities
9 believe the relationship to be one of cause-and-effect. . . . The statistical data from
10 the smoking-health studies are almost universally accepted. After more than ten
11 years, criticisms of the studies have been reduced to the dictum A statistical study
12 cannot prove a cause-and-effect relationship between two factors.

13 Rodgman made explicit that reports within the industry considered the evidence
14 of smoking's harm convincing.

15 The Evidence to Date: Obviously, the amount of evidence accumulated to indict
16 cigarette smoke as a health hazard is overwhelming. The evidence challenging
17 this indictment is scant. Attempts to shift the blame to other factors, e.g., air
18 pollutants, necessitates acceptance of data similar to those denied in the cigarette
19 smoke case. . . .

20 It has been repeatedly stated that some scientists discount the cigarette smoke-
21 lung cancer theory. This is true. But it should be noted that many of those quoted
22 in this regard are on record with contrasting views, e. g., Berkson, the statistician,
23 has stated "...the definitive important finding of these statistical studies is not that

1 there is an association between smoking and lung cancer, but that there is an
2 association between smoking and deaths from all causes generally.”

3 Rodgman expressed concern and frustration that most aspects of the smoking and
4 health questions had been left to the TIRC. He complained:

5 If a company plead “Not guilty” or “Not proven” to the charge that cigarette
6 smoke (or one of its constituents) is a factor in the causation of lung cancer or
7 some other disease, can the company justifiably take the position that publication
8 of data pertaining to cigarette smoke composition or properties should be
9 withheld because such data might affect adversely the company's economic status
10 when the company has already implied in its plea that no such etiologic effect
11 exists?

12 It is not my intent to suggest that this Company accept the cigarette-smoke-health
13 data at face value, but I do suggest that we actively participate in cigarette smoke-
14 health studies.

15 **Q: Why do you find this document significant for the historical question of the**
16 **source of the idea of a controversy over the health effects of cigarette smoking?**

17 A: Again, this is an important document because it offers a candid, internal
18 assessment from an industry scientist. According to Rodgman, the epidemiologic studies
19 were “almost universally accepted” and the evidence that smoking was a health hazard
20 was “overwhelming.” This is not a *post hoc* assessment, but rather a contemporary
21 evaluation by a senior company scientist written two years before the Surgeon General’s
22 Report. Further, it suggests how distant the public relations approach was from credible
23 scientific assessments of the health effects of smoking. Despite such internal frustration

1 – and despite the unanimity of independent evaluations and the repeated confirmations of
2 the scientific findings – the industry remained committed to the strategy it had devised in
3 1953 and 1954. It had soon become clear that no particular evidence or scientific
4 approach would convince C. C. Little and the TIRC of the harms incurred by smoking.

5 **Q: Dr. Brandt, as a medical historian, have you developed opinions about the**
6 **1964 Surgeon General's Report?**

7 A: Yes, I have.

8 **Q: What are those opinions?**

9 A: The Surgeon General's Report of 1964 was an unimpeachable statement of
10 scientific consensus. It is a document of genuine historical significance. It marked the
11 critical recognition that the federal government would assume the responsibility of
12 providing the public with a scrupulous non-partisan scientific assessment of the harms of
13 a consumer product. No other public entity had the capacity or resources to offer such a
14 comprehensive and objective assessment. Given the resources which the industry had
15 brought to bear to foment and sustain the notion of a scientific controversy it became
16 crucial for the government to develop a process to evaluate carefully and critically the
17 available evidence. This process was important for at least two reasons. Only with this
18 type of unassailable evaluation could the government adequately inform the public. And
19 secondly, such evidence would be central to efforts to legislate programs for health
20 promotion and disease prevention. Given the claims of "controversy" and widespread
21 public confusion about the harms of smoking, the word of the Surgeon General's
22 Advisory Committee provided a critical process in the production of useful public
23 knowledge of science. The Report became a model for nonpartisan, independent

1 governmental assertions of scientific evidence of public moment.

2 **Q: Will you explain the basis for your opinions?**

3 A: My opinions are based on the circumstances surrounding the formation of the
4 Surgeon General's Advisory Committee, the work of the Advisory Committee, and the
5 substance of the Report itself, all of which contribute to the Surgeon General's Report of
6 1964 being widely considered by historians to be one of the most significant documents
7 in the history of twentieth century public health.

8 **Q: I'd like to examine those three issues – the formation of the Committee, the**
9 **work of the Committee, and the substance of the Report – one at a time. As a**
10 **medical historian, what do you find most significant in the circumstances**
11 **surrounding the formation of the Surgeon General's Advisory Committee?**

12 A: Since the early 1950s, with the publication of the pathbreaking epidemiological
13 studies in the U.S. and the U.K., the findings demonstrating that smoking causes disease
14 had been widely challenged and distorted by the tobacco industry and its representatives.

15 During the 1950s a powerful consensus had emerged in the medical and scientific
16 communities concerning the harms associated with cigarette use. Nonetheless, the
17 industry had been successful in creating the impression of a "continuing controversy"
18 through its intensive public relations efforts (including the activities of TIRC, and, after
19 1958, the Tobacco Institute). At every opportunity industry representatives insisted there
20 was "no proof," that the impact of smoking on health was an "open question," and that
21 intensive additional research would be required to find the "truth." As a result of this
22 campaign, there remained substantial public misconceptions about the state of scientific
23 knowledge of the harms of smoking.

1 The Surgeon General's Advisory Committee on Smoking and Health was
2 organized to evaluate the evidence about cigarettes and disease and offer a definitive
3 assessment. As a result, the process of the committee's work, its selection, and its
4 findings had to represent a model of objective, public scientific and medical inquiry. If
5 the Committee was to offer a rigorous and systematic assessment of the health
6 implications of smoking, it was crucial that it be committed to open inquiry.

7 **Q: How were those concerns accounted for in the formation of the Committee, if**
8 **at all?**

9 A: To establish the Advisory Committee, Surgeon General Luther Terry created a list
10 of some 150 individuals. None were known to have taken a public position regarding the
11 relationship of smoking and health. These individuals represented a number of fields and
12 medical specialties from pulmonary medicine to statistics, cardiology to epidemiology.
13 This list was then circulated to the American Cancer Society, the American Heart
14 Association, National Tuberculosis Association, American Medical Association, as well
15 as the Tobacco Institute. Each group was permitted to eliminate any name, without any
16 reason cited. Individuals who had already published on the issue or had taken a public
17 position were also eliminated. The selection process indicated Terry's commitment to a
18 process that would eventuate in a genuine and definitive conclusion. He had insured that
19 the Report could not be attacked on the basis of its membership. All ten of the members
20 were eminent physicians and scientists; eight were medical doctors, one was a chemist
21 and the other a statistician. Three of the panelists smoked cigarettes, two others
22 occasionally smoked pipes or cigars. Also, as the Report explained at page 14 as it has
23 been marked as U.S. Exhibit 64,057:

1 All of the major companies manufacturing cigarettes and other tobacco products
2 were invited to submit statements and any information pertinent to the inquiry.
3 The replies which were received were taken into consideration by the Committee.
4 Terry's first ten selections all agreed to serve on the Committee, indicating to
5 him, "that these scientists were convinced of the importance of the subject and of the
6 complete support and confidence of the Public Health Service," as he wrote
7 retrospectively in 1983 in the *New York State Journal of Medicine*, marked as U.S.
8 Exhibit 21,376.

9 **Q: Who were the ten members of the Committee?**

10 A: Walter J. Burdette was a prominent surgeon and chair of the Surgery Department
11 at the University of Utah; John B. Hickam the Chair of Internal Medicine at the
12 University of Indiana. Charles LeMaistre was a pulmonary specialist and head of a very
13 large cancer treatment center. The pathologists joining the Committee were Emmanuel
14 Farber, Chair of Pathology at the University of Pittsburgh and Jacob Furth from
15 Columbia, an expert on the biology of cancer. Maurice Seevers was Chair of the
16 University of Michigan Pharmacology Department. Louis Fieser of Harvard University
17 was an eminent organic chemist. Completing the Committee were Stanhope Bayne-
18 Jones, a bacteriologist, head of New York Hospital and dean of Yale Medical School,
19 Leonard H. Schuman, epidemiologist at the University of Minnesota, and William G.
20 Cochran, a Harvard University mathematician with expertise in statistical methods. By
21 appointing this distinguished group, Terry assured that the Advisory Committee would be
22 protected from political attacks and charges of bias and subjectivity. The Report drew on
23 the respective disciplinary strengths of the committee members.

1 **Q: As a medical historian, what do you find most significant in the**
2 **circumstances surrounding the work of the Surgeon General's Advisory**
3 **Committee?**

4 A: Terry set the charge for the Committee, and the charge itself is significant. He
5 divided the work into two distinct phases. The first phase, the work of the Advisory
6 Committee, was to determine the "nature and magnitude of the health effects of
7 smoking."

8 **Q: Where is that quotation taken from?**

9 A: This quotation comes from one of the initial planning documents for the
10 committee, reproduced here as U.S. Exhibit 63,531, now preserved in the Records of
11 Public Health Service held in the National Archives in what is known as Record Group
12 90. I first conducted research in this collection in the late 1980s. It contains a great deal
13 of unpublished correspondence, memos, and minutes relating to the process of the
14 Surgeon General's Advisory Committee. Again, research in such collections is
15 characteristic of professional historical investigation.

16 As these documents show, the committee understood that there had been
17 considerable debate throughout the 1950s – and also going back in medical history –
18 about how best to categorize the term cause. Was a cause both necessary and sufficient
19 to result in disease? Might there be something that only sometimes causes disease?
20 Might there be other factors? The industry had exploited these questions over the
21 previous decade to obfuscate much that was scientifically known about tobacco and
22 disease.

23 **Q: Is there anything else included within what you find most significant in the**

1 **circumstances surrounding the work of the Surgeon General's Advisory**
2 **Committee?**

3 A: Yes. The Committee sought to arrive at a clinical judgment on smoking. As one
4 public health official explained, also in U.S. Exhibit 63,531, "What do we (that is, The
5 Surgeon General of the United States Public Health Service) advise our Patient, the
6 American public, about smoking." At its first meeting in November 1962, the Committee
7 decided that it would base its assessment on a comprehensive review of the now
8 considerable existing data; new research would be outside the capability of the
9 Committee and delay too greatly the report of any conclusions.

10 The Committee met together nine times in just over a year. In between these
11 meetings both committee members and staff worked to review, critique, and synthesize
12 what had become a formidable volume of scientific work on tobacco. Terry promised that
13 the report on these findings would be followed by phase II, proposals for remedial action.
14 This was significant, for it kept the Committee away from the politics which swirled
15 around the tobacco question. What Terry sought – and ultimately got – was a document
16 that would be unimpeachable from a scientific point of view. Terry astutely recognized
17 that the Advisory Committee could only speak with authority about the scientific nature
18 of the health risks of smoking; he would leave the policy questions to the political
19 process.

20 The question at stake was what approaches could be utilized to assess
21 scientifically the relationship between smoking and health? How could a variety of
22 strategies and techniques be deployed in a timely way to devise answers to this important
23 question? And, finally, what was the character and depth of the evidence presented on

1 which to make public policy and clinical and individual judgments? It is important to
2 note that the conclusions of the report did not rely exclusively on statistics. Certainly the
3 epidemiologic findings relied significantly on statistical methods, but the criteria that the
4 Report promulgated to evaluate causality went significantly beyond any simple statistical
5 association.

6 **Q: Can you explain how the criteria utilized in the Report to evaluate causality**
7 **went beyond simple statistical association?**

8 A: Yes. In the Committee, William Cochran, the noted Harvard statistician, took the
9 lead in organizing and drafting the Report's single most critical chapter, "Criteria for
10 Judgment." Most centrally, the Committee labored over the issue of causality. What did
11 it mean to say, for example, that cigarettes *caused* lung cancer? How should cause be
12 distinguished from "associated with," "a factor," or "determinant"? The Report sought to
13 clarify this issue at the outset, noting at page 21, "The word 'cause' is the one in general
14 usage in connection with matters considered in this study, and it is capable of conveying
15 the notion of a significant, effectual, relationship between an agent and an associated
16 disorder or disease in the host." But members of the committee realized the complexity
17 of saying simply that smoking causes cancer. Many individuals could smoke heavily
18 throughout their lives, and yet not develop lung cancer; "cause" could imply a single
19 process in which A, by necessity, would lead to B. Therefore they acknowledged the
20 complexity:

21 It should be said at once, however, that no member of this Committee used the
22 word 'cause' in an absolute sense in the area of this study. Although various
23 disciplines and fields of scientific knowledge were represented among the

1 membership, all members shared a common conception of the multiple etiology
2 of biological processes. No member was so naive as to insist upon mono-etiology
3 in pathological processes or in vital phenomena.

4 Despite the complexities in defining causality, the Committee nonetheless
5 concluded that it was appropriate, given the evidence, to use this terminology. Therefore
6 they concluded:

7 Granted that these complexities were recognized, it is to be noted clearly that the
8 Committee's considered decision to use the words "a cause" or "a major cause" or
9 "a significant cause," or "a causal association" in certain conclusions about
10 smoking and health affirms their conviction.

11 **Q: How was the issue of cause ultimately addressed in the Report?**

12 A: The Surgeon General's Committee understood that the public's health was at
13 stake, and in the medical sciences, cause always demanded inference. The Committee
14 identified a set of criteria to evaluate the significance of a causal relationship.
15 Recognizing that the nature of inference, as a process, requires judgment, the Committee
16 sought to explicitly define this process, outlining five specific conditions for judging
17 causal relations.

18 First, the consistency of the association. Nearly all the retrospective and
19 prospective studies produced comparable results, despite the fact that different methods
20 were employed for collecting data.

21 Second, the strength of the association. The ratio of lung cancer rates for smokers
22 versus non-smokers; age-adjusted for the two groups, that is, what is the size of the
23 effect, and what is the size of the problem in relation to other diseases? The Committee

1 assessed the significance of the dose effect phenomenon, finding that risk increased with
2 amount smoked. According to the Report:

3 [A]verage smokers of cigarettes have a 9- to 10-fold risk of developing lung
4 cancer, and heavy smokers, at least a 20-fold risk. Thus it would appear that the
5 strength of the association between cigarette smoking and lung cancer must be
6 judged to be high.

7 Third, the Committee looked to the specificity of association. This criteria,
8 according to the Report:

9 implies the precision with which one component of an associated pair can be
10 utilized to predict the occurrence of the other, i.e., how frequently the presence of
11 one variable (e.g., lung cancer) will predict, in the same individual, the presence
12 of another (e.g., cigarette smoking).

13 In a discussion of the specificity of the relationship between any factor
14 possibly causal in character and a disease it may produce, it must be recognized
15 that rarely, if ever, in our biologic universe, does the presence of an agent
16 invariably predict the occurrence of a disease. Second, but not less important, is
17 our growing recognition that a given disease may have multiple causes.

18 In the current case, the specificity of the association was especially strong. The Report
19 explained, "of the total load of lung cancer in males about 90 per cent is associated with
20 smoking."

21 Fourth, the temporal relationship of associated variables. As the Committee
22 explained:

23 [E]xposure to an agent presumed to be causal must precede, temporally, the onset

1 of a disease which it is purported to produce. . . . [N]o evidence has thus far been
2 brought forth to indicate that the initiation of the carcinomatous process in a
3 smoker who developed lung cancer antedated the onset of smoking.

4 Fifth, the Committee identified the coherence of the association, explaining in the
5 Report that “[a] final criterion for the appraisal of causal significance of an association is
6 its coherence with known facts in the natural history and biology of the disease.”

7 Thus, the assessment of causality was part of a coherent and logical explanation.

8 **Q: Were these criteria new to the evaluation of causal hypotheses at the time of**
9 **the Report?**

10 A: Physicians, scientists, and public health officials had utilized these criteria, in
11 different ways, throughout medical history. Indeed, to an important degree, such
12 approaches to assessing causality date back to the Hippocratic traditions in which agent,
13 host, and environment were seen as interacting to determine health or disease. When
14 James Lind concluded in 1747 that fresh fruit could prevent scurvy among sailors, he was
15 utilizing related criteria; when John Snow came to the conclusion that cholera was carried
16 in the London water supply in 1849 he was utilizing aspects of these criteria; when
17 Joseph Goldberger discovered that pellagra was a vitamin-deficiency disease in 1917, he
18 was applying aspects of these criteria. There are, of course, many other examples.

19 The clearly formulated criteria of the first Surgeon General’s report did, however,
20 bring together generations of observations across multiple scientific disciplines about
21 disease and its causes in populations.

22 **Q: As a medical historian, what do you find most significant in the substance of**
23 **the 1964 Report?**

1 A: The scope of material reviewed and the conclusions reached by the Committee are
2 extraordinarily significant. In all, the 387-page report cited 7,000 articles; the critical
3 review of this evidence substantiated the cigarette as a cause of disease. The *Report*
4 came to the following conclusions:

5 Cigarette smoking is associated with a 70 percent increase in the age specific
6 death rates of males. The total number of excess deaths causally related to
7 cigarette smoking in the U.S. population cannot be accurately estimated. In view
8 of the continuing and mounting evidence from many sources, it is the judgment of
9 the Committee that cigarette smoking contributes substantially to mortality from
10 certain specific diseases and to the overall death rate.

11 Cigarette smoking is causally related to lung cancer in men; the magnitude of the
12 effect of cigarette smoking far outweighs all other factors. The data for women,
13 though less extensive, point in the same direction.

14 Their risk of developing lung cancer increases with duration of smoking and the
15 number of cigarettes smoked per day, and is diminished by discontinuing
16 smoking.

17 The Report carefully evaluated the animal studies that had been conducted up to that
18 time:

19 Bronchogenic carcinoma has been produced in laboratory animals by the
20 administration of polycyclic aromatic hydrocarbons, certain metals, radioactive
21 substances, and viruses. The histopathologic characteristics of the tumors
22 produced are similar to those observed in man and are predominantly of the
23 squamous variety. . . .

1 Condensates of tobacco smoke are carcinogenic when tested by application to the
2 skin of mice and of rabbits, by subcutaneous injection in rats, and by painting the
3 bronchial epithelium of dogs. . . .

4 Bronchogenic carcinoma has not been produced by the application of tobacco
5 extracts, smoke, or condensates to the lung or the tracheobronchial tree of
6 experimental animals with the possible exception of dogs.

7 The Committee also found impressively high death rates among smokers, which
8 increased with consumption:

9 The death rate for smokers of cigarettes only, who were smoking at the time of
10 entry into the particular prospective study, is about 70 percent higher than that for
11 nonsmokers. The death rates increased with the amount smoked. For groups of
12 men smoking less than 10, 10-19, 20-39, and 40 cigarettes and over per day,
13 respectively, the death rates are about 40 percent, 70 percent, 90 percent, and 120
14 percent higher than for non-smokers. The ratio of the death rates of smokers to
15 nonsmokers is highest at the earlier ages (40-50) represented in the studies, and
16 declines with increasing age. The same effect appears to hold for the ratio of the
17 death rate of heavy smokers to that of light smokers. In the studies that provided
18 this information, the mortality ratio of cigarette smokers to nonsmokers was
19 substantially higher for men who started to smoke under age 20 than for men who
20 started after age 25. The mortality ratio was increased as the number of years of
21 smoking increased. In two studies which recorded the degree of inhalation, the
22 mortality ratio for a given amount of smoking was greater for inhalers than for
23 non-inhalers.

1 From a clinical and public health perspective, the Report concluded that stopping
2 smoking lowered an individual's risk of disease and health:

3 Cigarette smokers who had stopped smoking prior to enrollment in the study had
4 mortality ratios about 1.4 as against 1.7 for current cigarette smokers. The
5 mortality ratio of ex-cigarette smokers increased with the number of years of
6 smoking and was higher for those who stopped after age 55 than for those who
7 stopped at an earlier age.

8 **Q: You indicated that the Report is "widely considered by historians to be one**
9 **of the most significant documents in the history of twentieth century public health."**
10 **Do you agree with that assessment?**

11 A: Yes, I do.

12 **Q: Can you explain why you believe that the 1964 Report is one of the most**
13 **significant documents in the history of twentieth century public health?**

14 A: In the face of systematic efforts by the tobacco industry to obscure the science
15 linking cigarettes to disease, the Surgeon General's Report provided a systematic,
16 authoritative assessment of the evidence. Given the impact of the TIRC and the Tobacco
17 Institute, such a review was essential. The Report confirmed and sustained the scientific
18 findings relating smoking to disease that had been conducted over more than the
19 preceding decade. Scientific questions about tobacco would persist, but the essential
20 question of the hazards of smoking – critical to the public's health – had been
21 systematically and thoroughly investigated, and definitively resolved. At the press
22 conference announcing the Committee's findings, Terry was asked whether he would
23 now recommend to a patient to stop smoking. His answer, reported in the *New York*

1 *Times* article reproduced as U.S. Exhibit 63,529, was an unequivocal “yes.”

2 **Q: Dr. Brandt, did the release of the Surgeon General’s Report end the public**
3 **idea of a “controversy” over the health effects of smoking?**

4 A: It did not.

5 **Q: Do you have an opinion as to why the Report did not end the public idea of a**
6 **controversy?**

7 A: Yes, I do. Although the Report was widely regarded within the scientific and
8 medical communities as definitive, the industry continued to mount a major public
9 relations campaign to encourage the public view that the “controversy” regarding
10 cigarettes and their impact on health continued.

11 The Report offered the industry an important opportunity to change course by
12 initiating a process of warning its patrons about the risks of using its product, but the
13 industry nevertheless decided to maintain the essential strategy that it had established in
14 1953: first, insist that there is no proof that tobacco causes disease; second, disparage and
15 attack all studies indicating a relationship between tobacco and disease; third, support
16 basic science research on cancer, largely unrelated to the hypothesis that smoking and
17 cancer are linked; and fourth, support research on alternative theories of carcinogenesis.

18 Even before the release of the first Surgeon General’s Report, the scientific
19 consensus regarding the harms of smoking was tacitly acknowledged among industry
20 researchers and executives. And yet the public position of the companies remained one
21 of distortion and denial of the scientific facts. Following the release of the Surgeon
22 General’s Report, the principal approach within the industry to the burgeoning
23 knowledge of tobacco’s harms was to “stay the course.” The industry continued to rely

1 on the basic strategic formulations set forth in the mid-1950s. It continued to assert
2 alternative causation theories (through arguments that had been effectively refuted
3 scientifically). Despite overwhelming evidence from a wide range of disciplines
4 including statistics and epidemiology, pathology and chemistry, clinical observation, and
5 animal experimentation, the tobacco industry would continue to claim “no proof.”
6 Without offering explicit assurances of safety, the industry continued to attempt to create
7 doubt about the scientific findings.

8 **Q: What do you base your conclusions on?**

9 A: My conclusions are based on industry public relations activity preceding the
10 Report, internal industry assessments made prior to the publication of the Report, internal
11 assessments of the industry’s public relations strategy in the aftermath of the publication
12 of the Report, and intense efforts by the tobacco industry to publicly contradict the
13 Report’s findings or otherwise minimize its impact on public consumption of cigarettes,
14 all weighed against the backdrop of scientific knowledge and the actions of the public
15 health community during this time period.

16 **Q: As a medical historian, how are these things – industry public relations**
17 **activity preceding the Report, internal industry assessments made prior to the**
18 **publication of the Report, internal industry assessments of the Report upon its**
19 **publication, and intense efforts by the tobacco industry to publicly contradict the**
20 **Report’s findings or otherwise minimize its impact on public consumption of**
21 **cigarettes – important to your conclusions?**

22 A: The Surgeon General’s Advisory Committee and its Report generated
23 considerable interest and concern within the tobacco industry. Much like the period in

1 1953 when scientific findings led to the plans for the TIRC and the industry's public
2 relations campaign, the SGAC and its definitive report placed the industry into a new
3 moment of assessment regarding its ongoing claims of "no proof" and its sustained
4 denials of the impacts of smoking on health. These materials inform my assessment of
5 the tobacco industry's activities in relation to the first Surgeon General's Report and the
6 impact of those activities on the public idea of controversy.

7 **Q: Can you provide examples of the first item you identified – industry public**
8 **relations activity preceding the Report?**

9 A: Yes, I can. Before the Surgeon General's Report was released in January of 1964,
10 the tobacco industry took steps to minimize its impact. For example, George Allen,
11 president of the Tobacco Institute, laid out the industry's ongoing position in a radio
12 interview, the transcript of which is contained at U.S. Exhibit 63,600 and indicates in
13 part:

14 ALLEN: . . . All the medical authorities as far as I know, or practically all of
15 them, agree that nobody knows what causes cancer, and specifically lung cancer,
16 and this is a matter that remains to be found by thorough and energetic scientific
17 investigation. . . .

18 ALLEN: . . . That study [from the Royal College of Physicians, 1962], while
19 considered very strong in its accusations, charges regarding smoking, nevertheless
20 that study itself said that the majority of people smoke without any harm to their
21 system. So if you say, am I going to get lung cancer if I smoke, a lot of people
22 get lung cancer who have never smoked in their lives. We had a recent case, in
23 which 27 nuns had died of lung cancer, not all together, not in the same place, but

1 among the statistics, who had never been near tobacco. So, certainly one would
2 have to say that if you just ask the question flatly, if I smoke, will I get lung
3 cancer, there are many, many cases and evidences - cited statements to the fact
4 that there is no proved cause and effect relationship between the two.

5 This is just one example of the industry's public relations activity during this time period,
6 but it represents a public statement that is flatly at odds with the scientific evidence at the
7 time.

8 **Q: And can you provide examples of the second item – internal industry**
9 **assessments made prior to the publication of the Report?**

10 A: Yes. Even though the public position of the tobacco industry remained
11 unchanged, industry executives internally expressed great concern about the
12 government's report. The Surgeon General's Report constituted the most significant
13 crisis for the industry since 1953, when they created the TIRC. As a result, some
14 executives argued for a new course of action in anticipation of its release. In their view,
15 the traditional denials and calls for additional research would not suffice in the wake of
16 such a definitive assessment as the Report would offer. In July 1963, in a document
17 marked as U.S. Exhibit 63,599, Brown and Williamson's Chief Counsel, Addison
18 Yeaman, offered his assessment:

19 Assume the Surgeon General's Committee concludes (whatever the jargon of
20 scientific analysis and to whatever degree specific) that there is real and
21 compelling evidence of a causal - or even a strongly "predisposing" relation
22 between smoking and cancer. Cardiovascular disorders will, in all probability,
23 also be found related to smoking. Upon that event, it would seem clear to me the

1 industry must do two things.

2 Whatever qualifications we may assert to minimize the impact of the Report,
3 we must face the fact that a responsible and qualified group of previously non-
4 committed scientists and medical authorities have spoken. One would suppose
5 we would not repeat Dr. Little's oft reiterated "not proven". One would hope the
6 industry would act affirmatively and not merely react defensively. We must, I
7 think, recognize that in defense of the industry and in preservation of its present
8 earnings position, we must either a) disprove the theory of causal relationship or
9 b) discover the carcinogen or carcinogens, co-carcinogens, or whatever, and
10 demonstrate our ability to remove or neutralize them. This means that we must
11 embark - in whatever form of organization - on massive and impressively
12 financed research into the etiology of cancer as it relates to the use of tobacco;
13 what constituents or combination of constituents in cigarette smoke cause or are
14 conducive to cancer of the lung. Certainly one would hope to prove there is no
15 etiological factor in smoke but the odds are greatly against success in that effort.
16 Despite this candid assessment, no change in the industry's public posture of "ongoing
17 controversy" resulted. In addition, Yeaman acknowledged that TIRC had principally
18 acted as a public relations unit:

19 The TIRC cannot, in my opinion, provide the vehicle for such research. It was
20 conceived as a public relations gesture and (however undefined the Scientific
21 Advisory Board and its grants may be) it has functioned as a public relations
22 operation. Moreover its organization, certainly in its present form, does not allow
23 the breadth of research - cancer, emphysema, cardiovascular disorders, etc. -

1 essential to the protection of the tobacco industry. I suggest that for the new
2 research effort we enlist the cooperation of the Surgeon General, the Public
3 Health Service, the American Cancer Society, the American Heart Association,
4 American Medical Association and any and all other responsible health agencies
5 or medical or scientific associations concerned with the question of tobacco and
6 health. The new effort should be conducted by a new organization lavishly
7 financed, autonomous, self perpetuating, and uncontrolled save that its efforts be
8 confined to the single problem of the relation of tobacco and human health.

9 But rather than collaborating with these health agencies – as they had promised to in the
10 “Frank Statement” – the industry continued to oppose them. As Yeaman explained, the
11 dominant concerns about litigation continued to dictate the industry’s persistent denials.

12 ...true we might worsen our situation in litigation, but that I would risk in
13 contemplation of the greater benefits to be derived from going on the offensive.
14 ...so long as the industry does not assume its research responsibility my long-held
15 position would remain unchanged and I would oppose either outright attacks on
16 the Surgeon General's Report or the giving of assurance to the smoking public not
17 supported by research evidence.

18 All one can say is that the Report will in all probability greatly complicate the
19 litigation problems.

20 Since denial of the relationship between smoking and disease had been deemed crucial to
21 the industry’s legal defense against liability litigation, as Yeaman indicated, any shift in
22 position on the scientific evidence was viewed as potentially enhancing the litigation risk.

23 **Q: And can you provide examples of the third item – internal assessments of the**

1 **industry's public relations strategy in the aftermath of the publication of the**
2 **Report?**

3 A: I can. For some in the industry, the Surgeon General's *Report* suggested the need
4 to fundamentally rethink the earlier strategy of denial and obfuscation regarding the
5 serious health implications of the cigarette. Future industry strategy, they suggested,
6 would necessarily focus on technical competition to remove harmful substances from
7 tobacco through effective filters and other innovations that they hoped to develop.
8 Further denial, they believed, would only alienate the public. But there was no change in
9 the industry's public insistence on a scientific controversy.

10 After the Report was released, executives continued to question internally the
11 position of insisting on a "continuing controversy." By 1967 an RJ Reynolds executive,
12 J.S. Dowdell, noted in a document marked as U.S. Exhibit 63,577 that "the industry has
13 little, if any, positive evidence" to refute the findings that cigarettes cause disease.
14 Indeed, after more than a decade of TIRC research, no single piece of evidence to
15 contradict the knowledge of smoking's harm had been produced. In 1968, in a letter that
16 has been identified as U.S. Exhibit 63,576, William Kloepfer, Jr., Vice-President of
17 Public Relations for the Tobacco Institute, wrote to Earle Clements, President of the
18 Tobacco Institute, expressing concern that the industry's strategy of consistent denial of
19 harm and risk might now be untenable:

20 Our basic position in the cigarette controversy is subject to the charge, and may
21 be subject to a finding, that we are making false or misleading statements to
22 promote the sale of cigarettes.

23 Indeed, from a historical viewpoint, there is much to be said for Mr. Kloepfer's

1 assessment.

2 Despite these suggestions, the cigarette manufacturers opted to continue to
3 collude in a public relations approach that claimed that the evidence against their product
4 was wholly inadequate; that the causes of lung cancer and other diseases were elusive;
5 that attempts to regulate their product were unnecessary and inappropriate given the so-
6 called "continuing controversy."

7 **Q: You mentioned the "intense efforts by the tobacco industry to publicly**
8 **contradict the Report's findings or otherwise minimize its impact on public**
9 **consumption of cigarettes" as the fourth basis for your opinion that publication of**
10 **the Report did not end the public idea of a "controversy" over the health effects of**
11 **smoking. What specifically are the efforts by the industry that you rely on?**

12 A: As I mentioned, despite internal industry debate about new strategies in the wake
13 of the Surgeon General's Report, the industry continued to insist publicly that there
14 remained an "open question" and "ongoing controversy" about the harms attributed to
15 their product. In a memo to Kloefer written a few months after Kloefer's memo, Carl
16 Thompson, who had worked on the tobacco account at Hill and Knowlton since 1953,
17 described the research the tobacco industry should make public in their memos sent to
18 doctors and dentists. The memo, marked as U.S. Exhibit 63,575, indicates:

19 The most important type of story is that which casts doubt on the cause and effect
20 theory of disease and smoking. . . . Thus, the headline should strongly call out the
21 point - Controversy! Other factors! Unknowns!

22 Clarence Cook Little continued to insist that the evidence linking cigarettes to
23 disease was nothing more than statistical noise. A 1969 CTR Press Release, marked as

1 U.S. Exhibit 63,574, explained:

2 The scientist who has been associated with more research in tobacco and health
3 than any other person declared today that “there is no demonstrated causal
4 relationship between smoking and any disease. The gaps in knowledge are so
5 great that those who dogmatically assert otherwise - whether they state that there
6 is or is not such a causal relationship - are premature in judgment. If anything, the
7 pure biological evidence is pointing away from, not toward, the causal
8 hypothesis.”

9 Little continued to imply that the evidence of a causal relationship was exclusively
10 statistical:

11 Statistical associations between smoking and lung cancer, based on study of those
12 two factors alone, are not proof of causal relationship in the opinion of most
13 epidemiologists. . . . According to Dr. Little, [the CTR] “has sponsored an
14 increasingly effective program in tobacco and health research.”

15 But Little offered absolutely no data to support such statements.

16 **Q: Dr. Brandt, in your expert opinion, at that time – 1969 – had CTR and its**
17 **predecessor, the TIRC, “sponsored an increasingly effective program in tobacco and**
18 **health research”?**

19 A: No, they had not.

20 **Q: Dr. Brandt, in your expert opinion, was there ever a time – from the**
21 **founding of the TIRC in 1954 through the dissolution of CTR – that the TIRC or**
22 **CTR sponsored an effective program in tobacco and health research?**

23 A: No, I do not believe that TIRC or CTR funded research was oriented to resolving

1 the question of the relationship of smoking to health.

2 **Q: What do you base your opinion on?**

3 A: My opinion is based on a number of sources and considerations, including the
4 overall focus of the TIRC and CTR research program and certain of the structural and
5 funding components of the organizations, as well as internal industry assessments of the
6 program. CTR research centered attention on the basic science of cancer, rather than on
7 immediate questions relating to epidemiology or carcinogenesis of smoke. Although a
8 number of CTR grantees published papers based on their research, most grantees
9 conceded that the work was not directed to questions associated with smoking and health.
10 CTR's efforts often focused on aspects of research concerning cancer as a general issue,
11 rather than the relationship of smoking to cancer.

12 **Q: You mentioned internal industry assessments of the program. How do the**
13 **internal industry assessments form a basis for your opinion?**

14 A: Internal industry assessments of the research program show that the tobacco
15 companies themselves viewed the research in this way. Again, it is important to note that
16 my assessment of the industry research program is not merely based on my *post hoc*
17 interpretation, but rather on the explicit views of industry executives. Brown and
18 Williamson's Addison Yeaman, for example, conceded in a 1968 document marked as
19 U.S. Exhibit 63,527:

20 [T]he argument seems to be that by operating primarily in the field of research of
21 the disease we do at least two useful things:

22 First, we maintain the position that existing evidence of a relationship between the
23 use of tobacco and health is inadequate to justify research more closely related to

1 tobacco.

2 Within the industry, the delays associated with this approach were well appreciated.

3 Yeaman observed:

4 Secondly, that the study of the disease keeps constantly alive the argument that
5 until basic knowledge of the disease itself is further advanced, it is scientifically
6 inappropriate to devote the major effort to tobacco.

7 Other industry executives admitted that CTR had not freely pursued the health
8 impact of tobacco. Helmut Wakeham at Philip Morris candidly wrote in 1970 in a
9 document marked as U.S. Exhibit 63,525:

10 It has been stated that CTR is a program to find out the “truth about smoking and
11 health.” What is truth to one is false to another. CTR and the Industry have
12 publicly and frequently denied what others find as “truth.” Let’s face it. We are
13 interested in evidence which we believe denies the allegation that cigaret smoking
14 causes disease.

15 By the 1970s the recognition of CTR as a public relations enterprise had become
16 increasingly explicit. In 1972, Earl Newsom and Company evaluated the content of the
17 CTR Annual Reports for the industry. In an assessment marked as U.S. Exhibit 63,570:

18 From a public relations point-of-view, if from no other, it would seem that the
19 Council should continue to receive support from its members, particularly in these
20 times of mounting consumerism. . . .

21 More specifically, we get the impression that when the use of laboratory animals
22 indicates that the findings are favorable, or at least not unfavorable, to the use of
23 tobacco, then the covering report either makes a positive statement about the use

1 of animals or no statement whatever. On the other hand, when the findings from
2 any particular project indicate that tobacco use may be contributing to a
3 discernible and unhealthy change in laboratory animals, then we get, in the
4 covering report, mention of the limitations imposed by the use of animals.
5 Whenever possible the reports pointedly refer to 'some who would' say smoking is
6 dangerous, based on any given test, as scientific crackpots. When possible, Dr.
7 Little qualifies the results of animal tests that tend to be critical, but emphasizes
8 them when they do not find evidence of carcinoma, implying that smoking is
9 harmless. The aim of his summations, much too apparently, seems to be to
10 protect smoking. . . .

11 More recent annual reports show decreasing editorial comment. This may be the
12 result of accumulating evidence, in the Council studies as elsewhere, which shows
13 some of the deleterious effects of heavy smoking.

14 In 1974, Alexander Spears, at the time the Director of Research and Development
15 at Lorillard, and who in 1995 was elected CEO and Chairman, confirmed this assessment
16 of CTR's public relations, political and legal motivation in a memorandum marked as
17 U.S. Exhibit 55,955:

18 Historically, the joint industry funded smoking and health research programs have
19 not been selected against specific scientific goals, but rather for various purposes
20 such as public relations, political relations, position for litigation, etc. Thus, it
21 seems obvious that reviews of such programs for scientific relevance and merit in
22 the smoking and health field are not likely to produce high ratings. In general,
23 these programs have provided some buffer to public and political attack of the

1 industry, as well as background for litigious strategy.

2 And by the late 1970s it had become more than apparent that CTR had no
3 intention of any serious investigation of the health impact of smoking. A memo written
4 by Thomas Osdene at Philip Morris reviewing "Potential Long-Term Scientific Studies"
5 in August of 1979, marked as U.S. Exhibit 35,899, noted:

6 SUBJECTS TO BE AVOIDED

- 7 1. Developing new tests for carcinogenicity.
8 2. Attempt to relate human disease to smoking.
9 3. Conduct experiments which require large doses of carcinogen to show
10 additive effect of smoking."

11 **Q: In your opinion, was the TIRC and CTR research program consistent with**
12 **representations in the Frank Statement?**

13 A: No, it was not. The TIRC/CTR research program explicitly contradicted the
14 industry commitments offered to the American public in the Frank Statement of January
15 1954. At the time of the statement, the industry already possessed important evidence
16 indicating the relationship of cigarette smoking to disease. The industry worked through
17 TIRC/CTR to discredit and distort medical and scientific findings. Its commitment to
18 research was dominated by public relations considerations and concerns about legal
19 liabilities.

20 Rather than assisting public health efforts, the industry steadfastly worked to
21 undermine them. In 1954, the Frank Statement had declared: "We accept an interest in
22 people's health as a basic responsibility, paramount to every other consideration in our
23 business." But rather than maintaining a public trust, TIRC/CTR worked to manipulate

1 and mislead the public concerning the harms of tobacco use.

2 **Q: In your opinion, was the TIRC and CTR research program consistent with**
3 **the industry objectives outlined in the Hill papers?**

4 A: Yes. TIRC/CTR clearly followed the strategy articulated by Hill and Knowlton in
5 1953-54. Hill and Knowlton had centered attention on public relations strategies to assist
6 the industry given the research findings linking smoking to serious disease and mortality.
7 As a result they understood that smokers (and future smokers) would require assurance in
8 denying those scientific findings. In 1964, Philip Morris Executive Vice President
9 George Weissman wrote to Philip Morris President Joseph F. Cullman III, marked as
10 U.S. Exhibit 20,189, "However, at some point, reflecting the same seriousness with
11 which we met the Report, we must in the near future provide some answers which will
12 give smokers a psychological crutch and a self-rationale to continue smoking."

13 Internal industry documents confirm my opinion. In 1972, for instance, Fred
14 Panzer, Vice President of the Tobacco Institute, offered a comprehensive analysis of the
15 industry's strategy since the early 1950s. The memo, marked as U.S. Exhibit 63,585,
16 makes explicit the industry's ongoing concerns about regulatory legislation, liability
17 litigation, and public relations concerning the health issues:

18 For nearly twenty years, this industry has employed a single strategy to defend
19 itself on three major fronts --litigation, politics, and public opinion.

20 While the strategy was brilliantly conceived and executed over the years helping
21 us win important battles, it is only fair to say that it is not – nor was it intended to
22 be – a vehicle for victory. On the contrary, it has always been a holding strategy,
23 consisting of

1 -- creating doubt about the health charge without actually denying it
2 -- advocating the public's right to smoke, without actually urging them to
3 take up the practice
4 --encouraging objective scientific research as the only way to resolve the
5 question of health hazard.

6 On the litigation front for which the strategy was designed, it has been
7 successful. While we have not lost a liability case, this is not because juries have
8 rejected the anti-smoking arguments.

9 On the political front, the strategy has helped make possible an orderly retreat.
10 But it is fair to say that it has not stemmed the pressure for new legislation,
11 despite the major concessions we have made.

12 On the public opinion front, however, our situation has deteriorated and will
13 continue to worsen. This erosion will have an adverse effect on the other fronts,
14 because here is where the beliefs, attitudes and actions of judges, juries, elected
15 officials and government employees are formed.

16 As Panzer noted, the industry's insistence on an "ongoing controversy" concerning the
17 harms of cigarette use was, in his opinion, wearing thin. Nonetheless, he advocated
18 reliance on the two central aspects of the traditional defense:

19 As things stand we supply them [the public] with too little in the way of ready-
20 made credible alternatives. . . . Two such credible alternatives exist:

21 1) The Constitutional Hypothesis i. e. people who smoke tend to differ
22 importantly from people who do not, in their heredity, in constitutional makeup,
23 in patterns of life, and in the pressure under which they live.

1 2) The Multi-factorial Hypothesis i. e. as science advances, more and more
2 factors come under suspicion as contributing to the illnesses for which smoking is
3 blamed -- air pollution, viruses, food additives, occupational hazards and stresses.
4 Our 1970 public opinion survey showed that a majority (52%) believed that
5 cigarettes are only one of the many causes of smokers having more illnesses. It
6 also showed that half of the people who believed that smokers have more illnesses
7 than non-smokers accepted the constitutional hypothesis as the explanation.
8 Industry data illustrated the inadequacies of public knowledge regarding the harms of
9 smoking. The campaign of misinformation and distortion had an impact on the public's
10 understanding of the health effects of smoking.

11 **Q: Did the TIRC/CTR sponsor legitimate and credible scientific work?**

12 A: In order to fulfill its larger public relations goals, it was critical that the
13 TIRC/CTR sponsor credible scientific investigations, conducted by scientists with
14 appropriate credentials and positions. Some TIRC/CTR sponsored research was
15 published in reputable peer-reviewed journals. This process was essential to the goal of
16 legitimizing the TIRC/CTR as a scientific agency, and providing Little and other
17 members of the Scientific Advisory Board with a forum for their statements. But, as
18 industry officials frequently observed in internal documents, the research conducted
19 under TIRC/CTR auspices did not focus on the central questions relating to the health
20 impact of cigarette smoking. The TIRC/CTR through its Special Projects also allocated
21 funding on a non-peer reviewed basis for research projects associated with litigation and
22 witness preparation.

23 **Q: You mentioned Panzer's opinion, as of 1972, that the industry's insistence on**

1 an 'ongoing controversy' concerning the harms of cigarette use was wearing thin.

2 **Has your historical analysis revealed any change in the industry's public relations**
3 **with respect to science at that time?**

4 A: It has not. Once the die of denial was cast, it proved next to impossible to shift
5 the industry's position of "no proof," "open question," and "controversy." Even as new
6 data confirming the powerful harms of tobacco came to be understood and articulated, the
7 industry held fast to its position that the dangers of smoking had not been demonstrated.
8 The commitment to the "open question" led to fundamental misstatements and deceptions
9 about the harms of smoking. Company executives and counsel had come to recognize
10 that clear assurances that smoking was *not* injurious to health now exposed them to
11 substantial claims of liability. Therefore, they utilized the "continuing controversy"
12 strategy, which they recognized distorted the truth and encouraged public
13 misunderstanding and denial.

14 **Q: Can you provide examples of the types of public relations statements that you**
15 **rely on for your conclusions about the industry's continued adherence public**
16 **position of no proof, open question and controversy?**

17 A: I can. The public relations campaign was extensive, and comprised of things like
18 a 1970 Tobacco Institute statement, published as an advertisement in major American
19 newspapers and marked as U.S. Exhibit 21,305, titled "The Question about Smoking and
20 Health Is Still a Question":

21 But - a major portion of this scientific inquiry has been financed by the people
22 who know the most about cigarettes and have a great desire to learn the truth... the
23 tobacco industry. And the industry has committed itself to the task in the most

1 objective and scientific way possible.

2 1115 reports in all. Through this work much valuable data have been
3 produced about lung cancer, heart disease, chronic respiratory ailments and other
4 diseases. However, there's still a lot more to be learned.

5 There are eminent scientists who believe that the question of smoking and
6 health is an open one and that research in this area must go forward. From the
7 beginning, the tobacco industry has believed that the American people deserve
8 objective, scientific answers. With this same credo in mind, the tobacco industry
9 stands ready today to make new commitments for additional valid scientific
10 research that offers to shed light on new facets of smoking and health.

11 But the eminent scientists in such pronouncements were never named.

12 Tobacco Institute literature consistently argued as if the evidence implicating the
13 cigarette remained hypothetical, limited and static, when just the opposite was true. A
14 1968 pamphlet marked as U.S. Exhibit 20,703 is representative:

15 Q: Has any important new evidence against cigarettes been reported in recent
16 years?

17 A: No. Cigarettes today are branded guilty on virtually the same kind of
18 evidence that was considered insufficient only a few years ago.

19 Entitled "The Cigarette Controversy," the pamphlet continued:

20 Q: Is smoking a health hazard?

21 A: That question is still an open one. . . .

22 At that time, most scientists considered the findings of these studies insufficient to
23 prove a case against smoking. Since then, many other studies have been done.

1 But there is still no proof that cigarette smoking is a cause of lung cancer – or any
2 other disease.

3 As another significant example, industry executives also continued to insist in the
4 1970s – as they had in the 1950s – that “if and when” any harmful elements were
5 identified in cigarettes, they would take necessary steps to remove them. In 1971, Joseph
6 F. Cullman III, President of Philip Morris, explained, as set out in the document marked
7 as U.S. Exhibit 35,622:

8 This industry can face the future with confidence because when, as, and if any
9 ingredient in cigarette smoke is identified as being injurious to human health, we
10 are confident that we can eliminate that ingredient.

11 Cullman insisted:

12 We do not believe that cigarettes are hazardous; we don't accept that. But we are
13 working with the government, working very hard with the government, on various
14 methods of ascertaining whether or not cigarettes can be found hazardous.... I
15 believe they have not been proved to be unsafe.

16 In support of my conclusions, I have also looked to continuance of the basic
17 strategies of insisting on a continuing “controversy” persisted into the 1980s and 1990s.
18 More than forty years after Hill and Knowlton crafted the Frank Statement and invented
19 the TIRC, the industry's essential position on the relationship of smoking and health had
20 remained largely unchanged. In 1994 – the fortieth anniversary of the Frank Statement –
21 in Congressional hearings before the Subcommittee on Health and the Environment,
22 industry executives asserted yet again that the causal relationship of smoking and cancer
23 had not been proven, as reported in newspapers such as the *Los Angeles Times*,

1 reproduced as U.S. Exhibit 20,468. And in 1998, it was reported in the *New York Times*
2 that Philip Morris CEO Geoffrey Bible, when asked, "Has anyone died from smoking
3 cigarettes?" replied, "I don't, I just don't know." The *New York Times* article has been
4 marked as U.S. Exhibit 22,167.

5 **Q: Dr. Brandt, we've discussed your opinion about the impact that the public**
6 **relations efforts of the tobacco industry had on the nature of the smoking and health**
7 **"controversy." Shifting focus somewhat, as a medical historian, do you have an**
8 **opinion on the impact of publicity the 1964 Surgeon General's Report on the**
9 **public's recognition of the health effects of smoking?**

10 A: I do. Some have argued that as a result of the media coverage of the data
11 demonstrating the harms of smoking that the public was well-informed about the risks of
12 cigarettes, or that the risks were "common knowledge." But there is no simple way to
13 define "common knowledge" and I have generally avoided this phrase in my own work.
14 Certainly in the mass media throughout the twentieth century there have been reports
15 about the health impacts of smoking and medical and scientific research into this
16 relationship. What seems clear from a variety of research about public knowledge about
17 health and health risks is that it is highly dependent on certain groups and their particular
18 social and educational contexts. As we have seen, the industry through their public
19 relations efforts vigorously contested the emerging scientific knowledge concerning the
20 harms of smoking from 1953 forward. Hill and Knowlton worked aggressively to
21 influence the media and assure that the arguments and interests of the industry were well
22 represented to journalists, broadcast reporters, and magazine writers. Hill and Knowlton
23 staff carefully documented their interventions on behalf of their clients and their many

1 successes.

2 Additionally, and of central importance to understanding what we might call the
3 information environment concerning tobacco and health, the industry sponsored massive
4 advertising campaigns for filtered cigarettes which implied to consumers that they were
5 protected from possible harms. For smokers and potential smokers, the combination of a
6 scientific "controversy" widely reported in the press, and the promises associated with
7 filtered products, widely advertised in the media, fundamentally shaped public
8 knowledge.

9 **Q: Why do you believe that advertising concerning filtered cigarettes is of**
10 **central importance to understanding the information environment concerning**
11 **tobacco and health?**

12 A: At the same time that the tobacco industry continued to insist that there was no
13 credible scientific evidence of the harmfulness of smoking, they nonetheless undertook
14 major campaigns to develop and market filter cigarettes. The industry understood that in
15 the face of the mounting scientific knowledge of the harmfulness of smoking, smokers
16 needed various forms of support. This support or affirmation might come in the notion
17 that there was a controversy about whether or not smoking was dangerous; or it might
18 come in the notion that filters effectively eliminated those dangers. The industry walked
19 a fine line in its aggressive marketing and promotion of filter cigarettes through the 1950s
20 and 1960s. On the one hand, it sought scrupulously to avoid any public
21 acknowledgement that its product was now, or had ever been, unsafe, a claim it would
22 maintain into the 1990s. On the other, it sought to reassure smokers whose legitimate
23 concerns had been raised by the emerging scientific data. As a result, the industry sought

1 to indicate that any harmful elements in tobacco smoke could be easily removed through
2 the technical innovation of filters. With the impressive popularity of filters, the industry
3 found itself in a delicate position of seeking to promote these new products as safer
4 without explicitly indicating health problems with their product. Therefore, at the very
5 time that the industry worked concertedly to disparage meticulously conducted scientific
6 investigations, their ads offered unverifiable reassurances from "medical specialists." At
7 the same time that industry researchers such as R.J. Reynolds's Alan Rodgman and Philip
8 Morris's Helmut Wakeham were detailing carcinogenic substances in cigarettes and
9 potential strategies for their removal, the TIRC put out a press release explaining:
10 "Chemical tests have not found any substance in tobacco smoke known to cause human
11 cancer or in concentrations sufficient to account for reported skin cancer in animals."
12 The industry exploited public desire for a safe product while simultaneously denying any
13 adverse health effects of smoking, as also shown by internal assessments and reports of
14 the Federal Trade Commission.

15 **Q: Please review U.S. Exhibit 63,601. Do you recognize this document?**

16 A: Yes, I do. This is a copy of the TIRC press release that I referred to, dated in
17 1960.

18 **Q: You mentioned a Philip Morris scientist named Helmut Wakeham. Who was**
19 **Helmut Wakeham?**

20 A: Wakeham, who joined Philip Morris as a research chemist in 1958, became
21 Director of Research and Development in 1960. Wakeham introduced the use of gas
22 chromatography for assessing the constituents in tobacco smoke. He would become
23 active at Philip Morris in promoting the development of a "medically acceptable"

1 cigarette.

2 **Q: Why do you believe that Wakeham was a significant figure for your**
3 **historical analysis of the smoking and health controversy?**

4 A: Wakeham recognized in numerous internal memoranda the cancer-causing effect
5 of cigarette smoke. In a September 22, 1959 memorandum that is marked as U.S. Exhibit
6 21,657, for instance, he wrote: "One of the main reasons people smoke is to experience
7 the physiological effects of nicotine on the human system. Nicotine, to the best of
8 present knowledge, does not produce cancer. Hence, in theory one could achieve the
9 major advantage of smoking without the hazard of cancer. But nicotine in tobacco smoke
10 is present in the tar phase."

11 As a result of the popularity of filters, and the competitive advantage a safe
12 cigarette would confer, Wakeham offered a proposal in 1961 to investigate the
13 possibilities of reducing carcinogens in smoke. The proposal is identified as U.S. Exhibit
14 20,381. The proposal listed fifteen carcinogens and twenty-four co-carcinogens, or tumor
15 promoters, in cigarette smoke. Wakeham also cited the belief that "cardiovascular
16 ailments that may arise from smoking are due to the physiological effects of nicotine,"
17 noting, in particular, nicotine's "[s]pecific effects on the adrenal medulla, causing it to
18 discharge epinephrine, a hormone which accelerates the heartbeat, contracts the
19 peripheral blood vessels, and raises the blood pressure." Wakeham identified 84% of the
20 more than 400 gas and particulate compounds in cigarette smoke, including those that he
21 specifically recognized as carcinogens, in sidestream, or secondhand, smoke. He
22 concluded:

23 Low irritation and low nicotine cigarettes for commercial exploitation will be

1 developed in the course of our present R & D program during the next two to five
2 years with an expenditure of not more than 25% of the R & D budgets during this
3 period.

4 A medically acceptable low-carcinogen cigarette may be possible. Its
5 development would require:

6 TIME

7 MONEY

8 UNFALTERING DETERMINATION

9 Later, on April 20, 1962, Wakeham recommended diversification of Philip Morris
10 USA's business at a greater rate due to the reporting of evidence that smoking leads to
11 disease.

12 **Q: Is the April 20, 1962 recommendation you are referring to contained in U.S.**
13 **Exhibit 20,120?**

14 A: Yes, it is.

15 **Q: You mentioned internal assessments of filtered cigarettes. Have you**
16 **identified any assessments in support of your opinions about the role of filtered**
17 **cigarettes in the information environment?**

18 A: I have. In one particularly notable example, Myron Johnston of Philip Morris
19 pointed out in June 1966 that smokers eagerly sought what they perceived to be "safer"
20 products in a report marked as U.S. Exhibit 37,511:

21 Available evidence from surveys shows conclusively that smokers are concerned
22 about the relationship of cigarette smoking to health but that they do not want to
23 quit smoking. They are, however, changing their smoking habits, generally

1 toward higher filtration, even at the expense of a loss of some tobacco flavor.
2 That these changes are health motivated is clear from the timing of the shifts: The
3 boom in filters came on the heels of the first health scare, and the Surgeon
4 General's Report stimulated the shift to charcoal filters. The acceptance of
5 menthol cigarettes and Lark indicates a willingness to accept nontobacco flavor as
6 a substitute for tobacco flavor. There is some evidence that the anti-cigarette
7 propaganda is more effective in reducing the rate of smoker recruitment than in
8 changing the habits of smokers.
9 The public had been conditioned to accept the filtering effects of charcoal in other
10 fields, and when charcoal was added to cigarette filters it proved to be an effective
11 advertising gimmick.

12 **Q: You also mentioned reports of the Federal Trade Commission. Have you**
13 **identified specific reports in support of your opinions about the role of filtered**
14 **cigarettes in the information environment?**

15 A: I have. In particular, in a 1967 examination of tobacco advertising practices
16 marked as U.S. Exhibit 57,179, the FTC noted that the public had largely been convinced
17 that filter cigarettes were less hazardous. Their report concluded:

18 For the most part, however, assuaging of smoker anxiety has been a very low key.
19 As previously indicated, the belief that filter cigarettes are less hazardous appears
20 to be widespread. It may be assumed therefore that to people holding this belief,
21 the word 'filter' itself connotes 'less hazard'. And through addition of suitable
22 adjectives to the word 'filter', this impression of relative safety can be enhanced.
23 Thus, in current advertising there are 'recessed filters' (Benson & Hedges and

1 Parliaments), 'white filters' (Yorks), 'menthol filters' (Springs) and 'filters with
2 coconut shell charcoal' (Philip Morris).

3 **Q: Can you identify the types of advertisements that you rely on to identify that**
4 **tension between the industry's public position on the scientific evidence and the**
5 **popularity of filtered products?**

6 A: I can. There were many of them during the 1953-1964 time period that we have
7 been discussing. As an example, in 1953, Liggett hired Arthur D. Little to test tobacco
8 condensates on mice in an attempt to develop strategies for removing carcinogens, at the
9 same time that it advertised its L & M filters, in the document marked as U.S. Exhibit
10 63,543, as "Just What the Doctor Ordered."

11 Kent cigarettes, with the new 'micronite filter,' were claimed to provide "the
12 greatest protection in cigarette history": "For the greatest protection of any filter
13 cigarette Kent with exclusive MICRONITE filter."

14 Similarly, in an advertisement in *Resident Physician* in 1961, marked as U.S.
15 Exhibit 36,122, Lorillard explained the advantages of the Kent (filter) cigarette:

16 Lorillard research has established that phenol is the major constituent of the
17 phenolic group of compounds in cigarette smoke which depress ciliary propelled
18 mucus flow. A highly effective method of selective filtration of phenols by
19 addition of a phenol-combining agent to an acetate filter is reported. KENT
20 cigarettes contain the new Micronite filter with PFA-17 pursuant to Lorillard
21 policy of continuous improvement of products through research.

22 **Q: What other factors do you rely on to support your opinion concerning the**
23 **implications of safety by cigarette manufacturers as a critical historical aspect**

1 relating to the publicity concerning evidence of the health effects of smoking?

2 A: I think it is important to recognize that health concerns on the part of the public
3 led to a radical reconfiguration of the cigarette market, as well as promotional and
4 advertising strategies. By 1954, filters had quickly come to comprise approximately 10
5 percent of the cigarette market. By the mid-1970s, this number would approach 90
6 percent. The introduction of many new brands in the late 1950s and early 1960s has
7 typically been referred to as the “tar derby.”

8 Of course, the tension that I spoke of is also reflected in the fact that the industry
9 continued to insist that the rise of filter cigarettes merely reflected the nature of consumer
10 demand. James P. Richards, President of the Tobacco Institute, explained in 1958 in a
11 document marked as U.S. Exhibit 21,326:

12 The cigaret industry has not changed its mind. Our position was and is based on
13 the fact that scientific evidence does not support the theory that there is anything
14 in cigaret smoke known to cause human lung cancer.

15 ...the production and marketing of filter cigarets are matters of individual
16 company competitive business. Anyone familiar with the tobacco industry knows
17 that tobacco manufacturers constantly compete to make products to please
18 customers.

19 **Q: In summary then, how do you place filters and advertising for filtered**
20 **cigarettes in the context of your testimony about the tobacco industry’s efforts to**
21 **create a “controversy” over the health effects of smoking?**

22 A: It is my opinion that filtered cigarettes, and their advertising and promotion,
23 constituted a critical aspect of industry strategy in the wake of categorical scientific

1 evidence demonstrating the harms of smoking. As I have suggested, the central part of
2 this strategy was to utilize science to argue that there was “no proof,” that there was a
3 controversy about the scientific findings. At the same time, a consistent counterpart to
4 this strategy was to imply that the product had been successfully modified to remove any
5 hazards. Since these two related approaches were in tension (and there were important
6 legal liabilities associated with them), the industry was forced to walk a fine line between
7 them. Both the effort to sustain a controversy and the reassurance of filtered cigarettes
8 were important in an ongoing effort to shape public knowledge about smoking and its
9 harms in the interest of the industry, and to maintain and expand the sales of cigarettes.
10 These objectives and the process of reaching them were precisely articulated in
11 December 1953 by Hill and Knowlton and subscribed to by the tobacco industry for the
12 next forty years.

13 **Q: And, again in summary, how did the development of filtered cigarettes relate**
14 **to the Hill and Knowlton public relations strategy for the tobacco industry?**

15 A: Hill and Knowlton had, in December 1953, identified a critical problem for the
16 industry as it faced new scientific evidence implicating their product as a cause of lung
17 cancer. As the memoranda from 1953 make clear, they well understood that the health
18 risks associated with smoking by that time had created a new environment that had
19 dramatically changed the market for selling cigarettes. Unless consumers came to doubt
20 the evidence, or came to believe that the product had been modified, the traditional
21 rationale for the product would be severely damaged. The industry utilized its
22 considerable resources in the aggressive implementation of this strategy. They repeatedly
23 denied and distorted the massive scientific evidence through a sophisticated public

- 1 relations program. At the same time, they implied that modifications in their product
- 2 protected consumers from these very harms.